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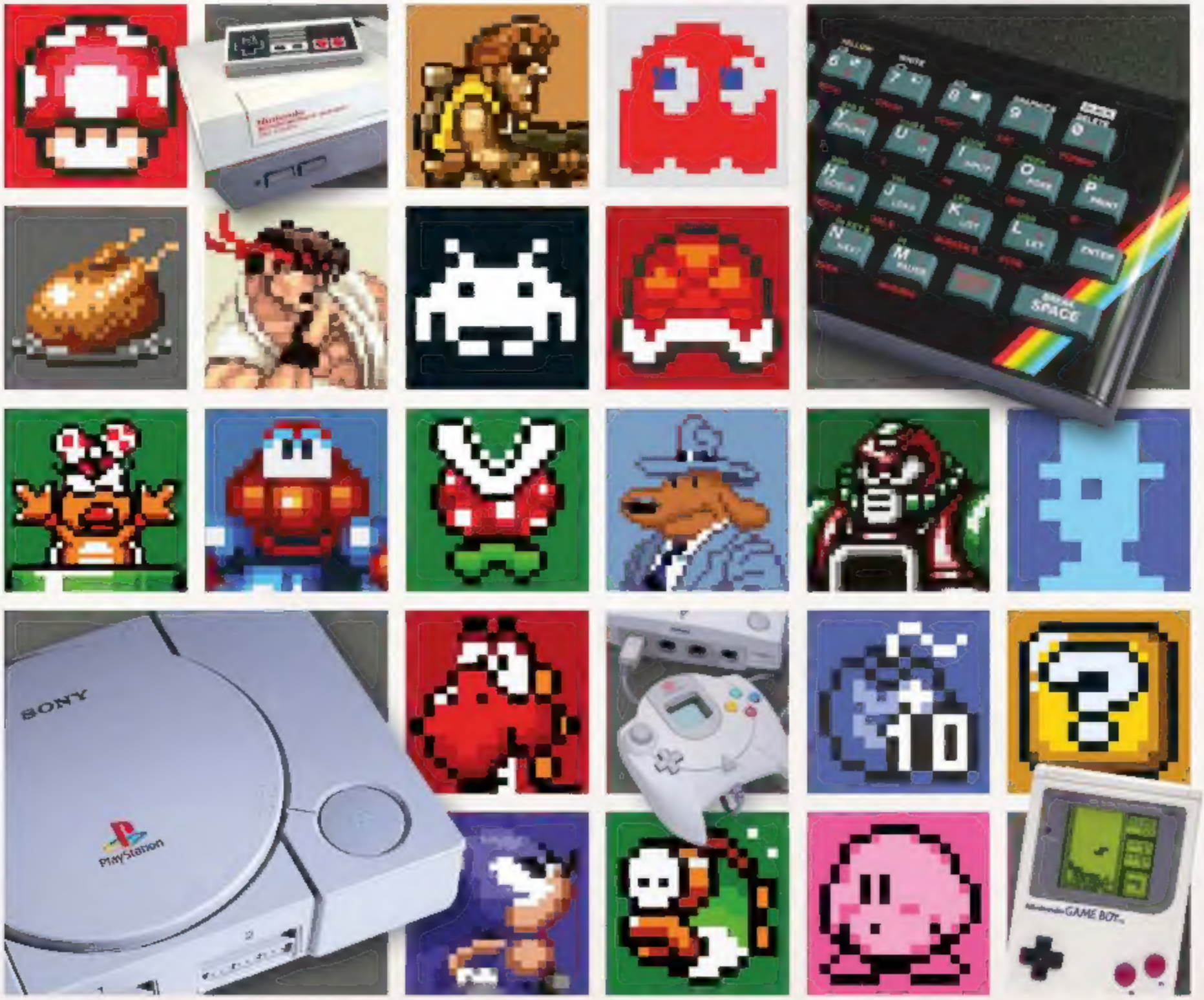
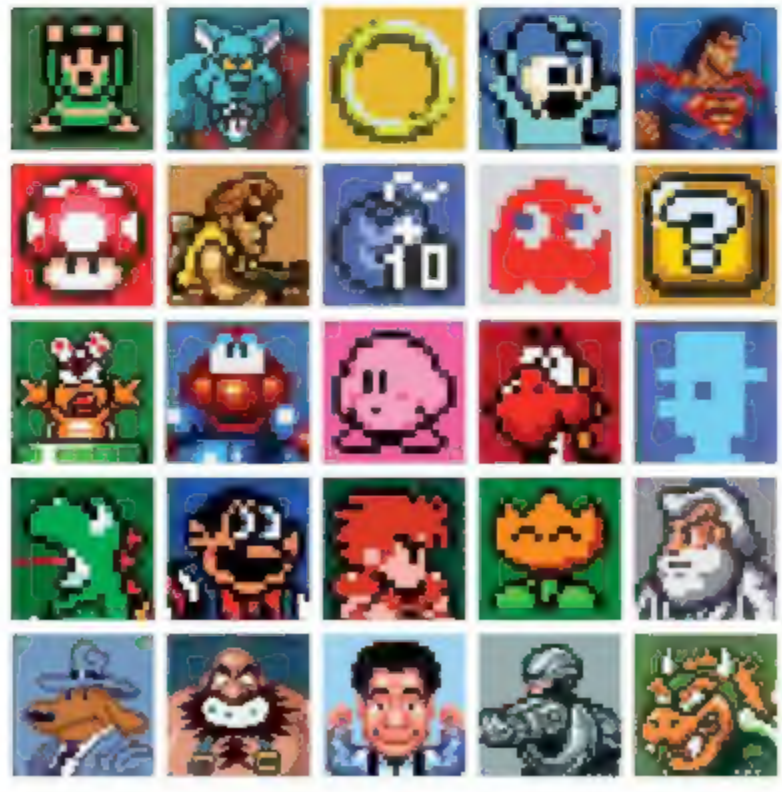


THE ULTIMATE GUIDE TO CLASSIC VIDEOGAMING

WELCOME TO

retro GAMER ANNUAL

Whether it was pitting your racing or shooting skills against friends in the arcade or whiling away hours at home trying to beat the boss on your SNES, anyone who has been playing games for a while can remember the thrill of playing as the industry was starting to develop. In this Retro Gamer Annual, we have collected the best content from the magazine this year, uncovering the story behind some of the industry's greats, including *Crazy Taxi*, *ToeJam & Earl*, and *Tekken*. We look back to the changing arcades of the Seventies, Eighties, Nineties and beyond to see how gaming transitioned from cabinets to consoles, and chat to legends RJ Mical and Graeme Devine. Join us as we explore gaming's colourful, pixelated past – we'll have you digging your Dreamcast out of the attic in no time.



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Bournemouth
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Website: www.imagine-publishing.co.uk
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Printed by
William Gibbons, 26 Planetary Road, Willenhall, West Midlands, WV13 3XT

Distributed in the UK, Eire & the Rest of the World by:
Marketforce, Blue Fin Building, 110 Southwark Street, London, SE1 0SU
Tel 0203 148 3300 www.marketforce.co.uk

Distributed in Australia by:
Network Services (a division of Bauer Media Group), Level 21 Civic Tower, 66-68 Goulburn Street, Sydney, New South Wales 2000, Australia Tel +61 2 8667 5288

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Retro Gamer Annual © 2014 Imagine Publishing Ltd

ISBN 978-1910433098

Part of the retro GAMER bookazine series

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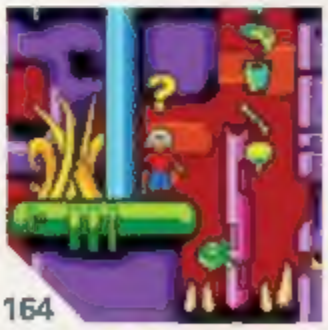

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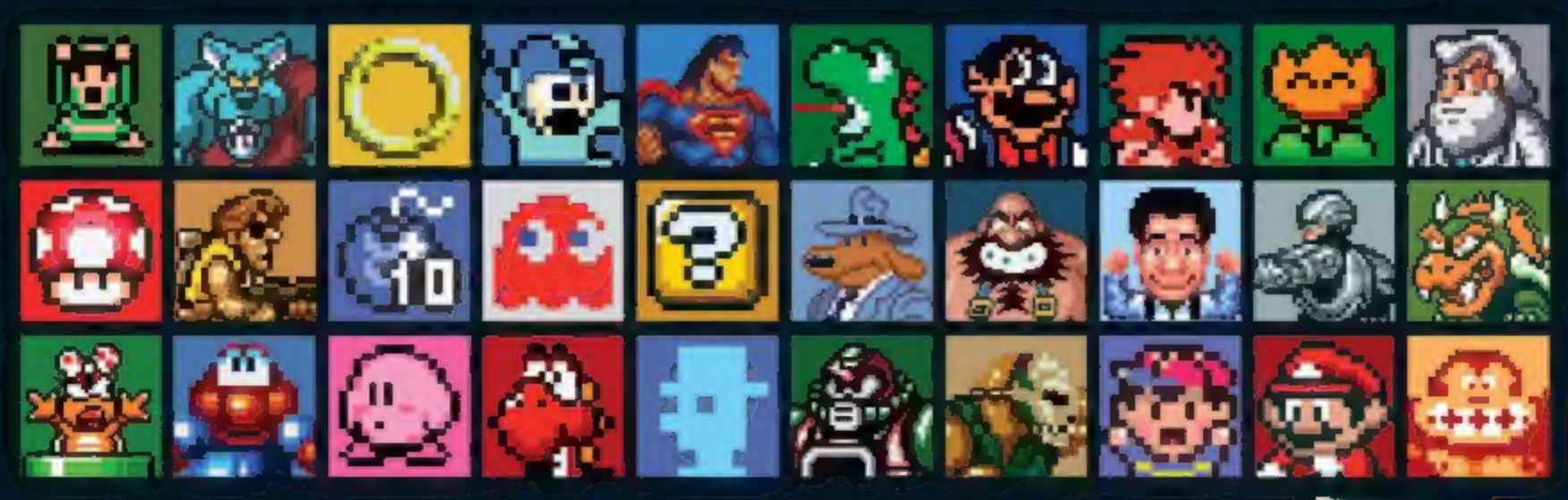

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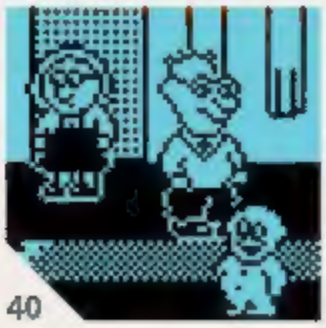

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THE HARDEST GAMES OF ALL TIME

It's no great secret that mainstream games are getting easier by the day. But as a new wave of gruelling games is making a hearty challenge popular once more, we've collected some of the most brutal games ever made from before the era of hour-long tutorials, hand-holding and easy rides...

CONTRA

FORMAT: VARIOUS YEAR: 1982 DIFFICULTY: 8

For many, this is where the love affair with all things hardcore first began. Whether you played *Contra*, *Gryzor* or *Probotector*, you got the same punishing experience – a side-scrolling shooter that really makes you work for every inch of screen you managed to reveal. Contact with basically anything that isn't the ground is deadly in this grim war-torn world, but precise control and an array of weapons allow Bill 'Mad Dog' Rizer and Lance 'Scorpion' Bean (yes, really) to blast their way through all the same. Things can get even tougher when the perspective changes during base raids, pulling the camera behind you for an into-the-screen shooter diversion where it's not always easy to judge where bullets actually are.

As tough as the game may be, Konami actually made the NES version harder still with additional hazards. Drafting in a friend to help you isn't actually the safest of ideas – if one of you starts to lag behind, the other will find themselves surprised by off-screen threats and coordinating a good two-player run is surprisingly tricky with so much going on. Even with the help of the Konami Code for 30 lives rather than the basic three, few who call themselves gamers today have seen the credits to *Contra*. Later games have retained much of the original's hardcore purity, but it's this one that many will remember through a haze of smashed, chewed and dented controllers.

» [NES] The NES port was surprisingly faithful to the coin-op, retaining levels, weapons and – most importantly – difficulty.

DEVIL MAY CRY 3: DANTE'S AWAKENING

FORMAT: PLAYSTATION 2 YEAR: 2005 DIFFICULTY: 10

We've often seen games have their difficulty levels altered when crossing from East to West or vice versa, but this is one of the most extreme cases. *Devil May Cry* is no walk in the park, yet Capcom decided that the default difficulty of the Western version should be the equivalent of Japan's Hard mode. If you never managed to get past Cerberus, now you know why – you were actually on Hard the whole time. Capcom addressed this for the Special Edition release but even so, *Devil May Cry 3* on the harder difficulties is something only the best will ever beat.

» [PlayStation 2] *DMC4*'s Dante can actually switch between styles on the fly – an amazing inclusion but one that proves terrifying in practice

INTO OBLIVION

FORMAT: AMSTRAD CPC YEAR: 1986 DIFFICULTY: 9

This somewhat obscure Amstrad space exploration game by Stephen Curtis is a mapper's worst nightmare – the game consists of some 2,500 screens across 42 planets, making it almost impossible to complete without first spending hours on sketching out the layout. To make matters even worse, reaching the end of this sprawling maze without collecting enough Psyche along the way would still lead to failure, making this one of the most gruelling games we've ever played. Today, even just a basic black-and-white image file of the game's map takes up more memory than the game itself does...

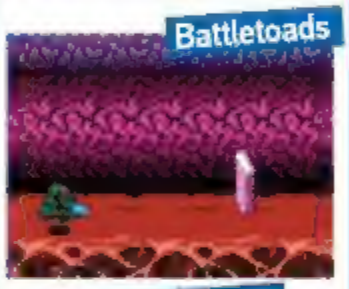
» [Amstrad CPC] It's visually basic, but what would you expect from a game so enormous?

FAMOUS DEATHS

Even the best will have seen these happen...

Resident Evil 4

Battletoads



Sonic The Hedgehog

Prince Of Persia

Manic Miner

Tomb Raider

SUPER MARIO BROS: THE LOST LEVELS

FORMAT: FAMICOM DISK SYSTEM
YEAR: 1986 DIFFICULTY: 8

It's widely renowned as one of the most accessible franchises in all of gaming, but *Mario* games haven't always offered players an easy ride. Later stages in most *Mario* titles tend to be pretty challenging to be fair, but this Japan-only sequel to the NES original sticks the boot in from the moment you hit Start. This comparatively obscene level of difficulty led to Nintendo deciding not to release the game outside of Japan, instead reskinning Fuji Television tie-in *Doki Doki Panic* to be *Super Mario Bros 2* in the West.

We're not surprised in the least that Nintendo was scared to put this out following the huge success of *Super Mario Bros* – the company had finally found its feet in the games industry, so following the most popular game with one that only experts could really enjoy would hardly have been the most sensible move. It's not just level design that makes this sequel harder, either. Sure, wider gaps and trickier platforming are part of it, but that's before you factor in the devious tricks that also came into play. Toxic mushrooms, more aggressive enemies, warp pipes that would actually send you *back* in the game rather than skipping stages... it's just plain rude.

» [Famicom Disk System] If you ever complained that *Super Mario Bros* was too easy, this is your punishment.

» [NES] Trust us, it's a lot harder than it looks.

TEENAGE MUTANT NINJA TURTLES

FORMAT: VARIOUS YEAR: 1989 DIFFICULTY: 10

Difficult games come in all shapes and sizes, but who would have thought that a cartoon tie-in could prove to be one of the most crushing of them all? Released the same year as the superior scrolling fighter, this half-shelled headache instead takes cues from the equally tough *Zelda II* (the Great Palace can do one, seriously) to combine top-down overworld exploration and side-scrolling levels.

Problem is, the hostile pixel blocks that attack you make getting through each area a nightmare, as do instant death hazards such as the electric cables in the river level or the weird car things that patrol the overworld. It just throws stuff at you until you can't take any more and collapse in a heap, sobbing uncontrollably. The PC version managed to make things even worse – redrawn graphics meant it looked better, sure, but a measurement error of *Spinal Tap* proportions meant that there was one particular jump that physically could not be cleared without cheating.

NINJA GAIDEN BLACK

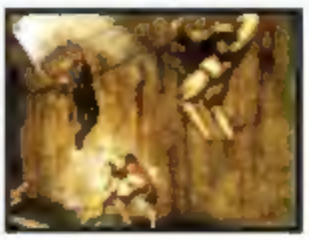
FORMAT: XBOX YEAR: 2005
DIFFICULTY: 9

Debates rage on to this day as to whether Capcom's *Devil May Cry* series or Team Ninja's modern *Ninja Gaiden* games sit at the head of the hardcore character action table. We'd mix that up a little by asking where *Bayonetta* factored into this fictional seating plan but when it comes to pure difficulty, it really does come down to this two-horse race. The simple answer is that despite so many similarities, the two games are surprisingly different – *DMC* is all about using super-tech cancels and dealing as much damage as possible, *Ninja Gaiden* is a much more defensive game, forcing dodges and parries rather than encouraging 500-hit combos.

Black remixed the Xbox-exclusive action game to include an easier difficulty in response to players who had moaned about the game's difficulty, but it wasn't quite that simple. Ninja Dog difficulty would basically mock players who chose it over the course of the game, while all of the other settings were tweaked to be more challenging and a whole new level, Master Ninja, added for those who thought they were Ryu Hayabusa reborn. We never even managed to beat the first boss on Master Ninja. Yeah, it's pretty rough.

As much as *Black* is the height of the franchise's harsh-but-fair challenge, it'd be plain wrong to omit the original *Ninja Gaiden* games from any discussion of difficult games. They fall more on the unfair side of things but still hold up well for anyone seeking out a challenge.

» [Xbox] While *Black* introduced the simpler Ninja Dog difficulty, it also scaled up the rest of the skill levels accordingly.



DEFENDER

FORMAT: VARIOUS YEAR: 1980 DIFFICULTY: 9

Few arcade games during the Eighties were as intimidating as Williams Electronics' *Defender*. Created in 1980 by Eugene Jarvis and Larry DeMar, it silently challenged you with its scary button setup.

Many arcade games of the time could be fairly simple affairs, typically comprising of a joystick and one or two buttons. Not *Defender* though. Jarvis's game featured five large buttons that just dared you to tackle them. One controlled your fire, another the smart bomb, while the third and fourth controlled your thrust and reverse. Finally, the Hyperspace button was your last ditch attempt to avoid an ugly death (although this in itself might spawn you in a more dangerous situation). Thrust and Reverse could have simply been applied to the joystick, but that would have been far too easy. *Defender* wanted your quarters and you were going to have to master every single aspect of it if you wanted to survive for more than a few minutes.

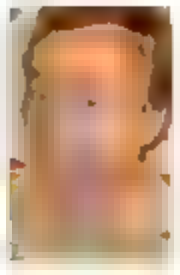
Mastering the controls was only half the story as the gameplay itself was just as difficult. Your ship zooms across a wrapped lunar backdrop in search of missing survivors that need to be protected from incoming invaders. The invaders themselves are unnervingly accurate with their shots and will also attempt to carry off your precious survivors. Let this happen and the invader turns into a far more dangerous mutant, with play continuing until all your survivors are dead (and the planet is destroyed, causing a huge ramp in difficulty) or you run out of lives. A handy radar appears at the top of the screen, but this in itself initially appears to be mocking you, taunting you by revealing the locations of jeopardised survivors, while showing you just how many invaders still stand in your way. You can shoot invaders to make them drop their precious cargo, but you're just as likely to kill the person you're trying to save.

Defender may be insanely difficult, but it has that rare element that constantly pulls you back. While it's tough, it's never unfair, and you always blame yourself for every pointless death. It remains one of the finest shooters around and while several sequels followed, none of them really lived up to the original magic that *Defender* offered.

> "The invaders themselves are unnervingly accurate with their shots"

INTERVIEW

Eugene Jarvis on the difficulty of Defender



Did you intentionally go out of your way to make *Defender* really hard?

The reason you get into game development is to make the ultimate game, the game you really want to play, that blows away all the limitations you see in the games out there. I was no different. *Defender* was designed to be the ultimate game for me – was the audience. So of course the game was too hard.

How much play-testing went into *Defender*? Do you feel that the game is well balanced?

I had been practicing for six months, and players had to deal with all this shit, a joystick and five buttons, play *Space Invaders* with your left hand, *Asteroids* with your right and deal with crazy mutant aliens, all with zero warning. The fact that it actually worked was kind of a miracle. According to the stats the average player lasted 37 seconds. For three lives. Total.

What's the key to making people return to a hard game?

There has to be some kind of obsessive-compulsive drive to keep you running through the gauntlet. There has to be an ultimate payoff, or at least the illusion thereof. Part of it can be an amazing audio visual experience, a tour de force of pixelated pyrotechnics and devastating sounds which makes the *Defender* ride a riot. But graphics and sounds alone are not enough. You need to tap into basic human instincts of survival, kill or be killed, bring out the inner neanderthal to rise to the challenge. Are you going to be beaten by a stupid machine?

Is balance important?

I think a huge key to the longevity of an impossible game is the right difficulty ramp. You need to ramp up to a place that's just a shade less than impossible, with just the barest probability of survival. Lots of play-testing is key to finding this zone, although it always boils down to a kind of feel or instinct of the last guy to touch the code. And then you fluctuate the difficulty in a wave-like fashion of challenge and relief, with lots of random events to keep it interesting.

DIFFICUTLY SPIKE

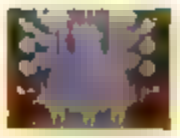
Every game has its ups and downs

DARK SOULS

■ While moment-by-moment gameplay is generally pretty tough, bosses really raise the bar – mistakes are mercilessly punished. One particular boss battle, Ornstein & Smough, is cited among the hardest of all time, and with good reason.

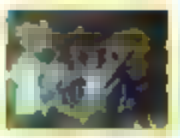
BATTLETOADS

■ Scrolling fighters don't tend to be easy, but this one is infamous for being borderline unfair. Make it past Turbo Tunnel and things get easier, but not for long – there's not so much a difficulty curve here as a difficulty mountain range – it's all over the place.



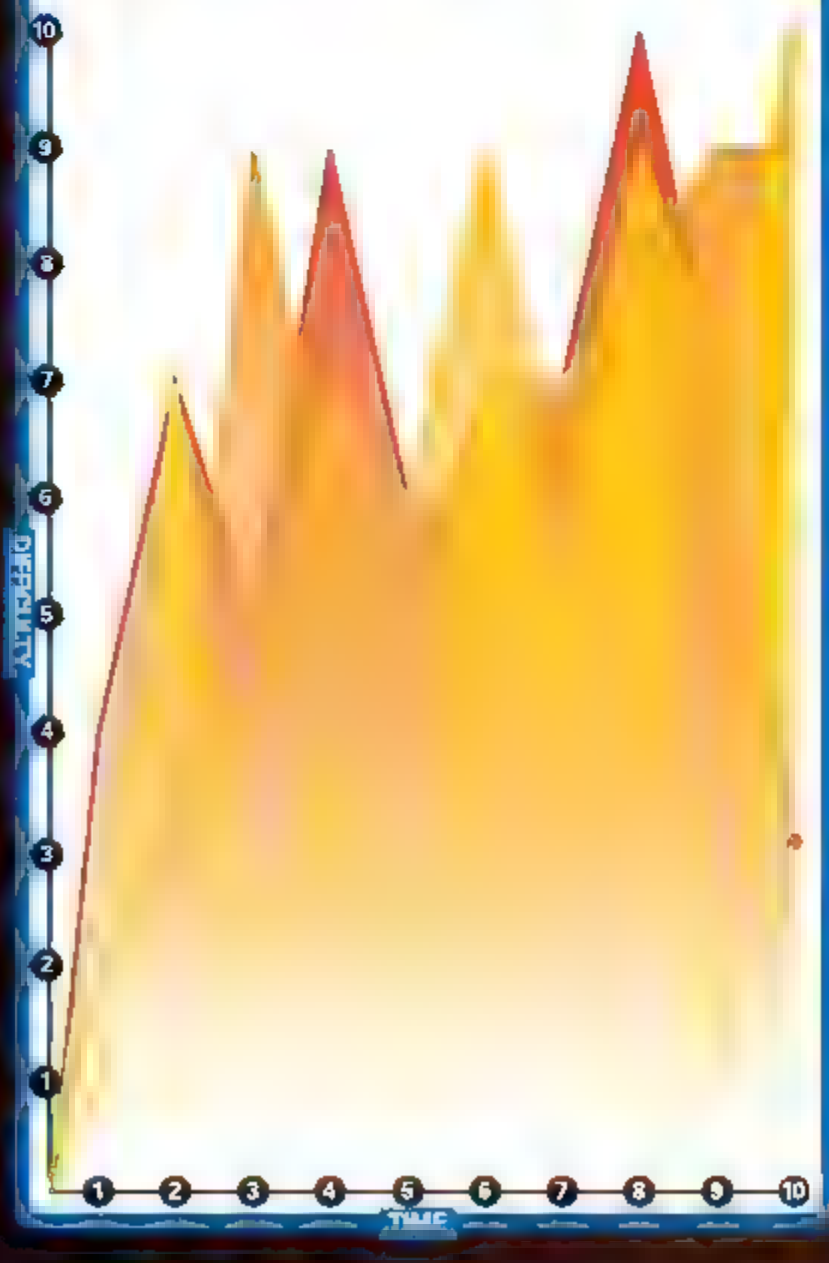
IKARUGA

■ Treasure games are often tough, but *Ikaruga*'s unique colour-switching mechanic makes it an entirely new discipline to master. Just surviving the later levels is tough enough, so watch out when you come to play properly in search of a decent high score.



FINAL FANTASY VII

■ Between mistranslations, optional bosses, chocobo racing and missable items, this one is all over the place. And while few would ever argue that *Final Fantasy* games are difficult, few would deny that this one had moments of frustration.



■ [NES] As much as we love this game, we can't help but hate it quite a lot as well.

BATTLETOADS

FORMAT: NES YEAR: 1991 DIFFICULTY: 10

Difficulty curves are one of the toughest things to get right in games, but few games have got the gradual increase in challenge quite so wrong as *Battletoads*. If we were to ask everyone who had ever played the game how far they got, we imagine the majority would think about it for a moment, tell us it was the third level then punch whatever was closest to them. Repeatedly.

Turbo Tunnel will go down in history as one of the most unfair stages in any game ever: a speedy side-scrolling race level where even a single collision proves fatal, and after the curve soars into the stratosphere with this horrible level, it doesn't even bother coming back down – the rest of the game's 13 levels are horrible as well, albeit at least in different ways. So vicious was this infamous level that later ports of the game actually saw it tweaked or even removed entirely – collisions are non-fatal in the Game Gear version, for instance, while the Amiga version overlooks the level entirely, replacing it with a far simpler alternative.

It wasn't even just Turbo Tunnel that proved problematic, though. Enemies could lock you into hit-stun combos before belting you into instant death drops while platforming – never exactly the game's strong point – gets stupid as you edge closer to a credits sequence that you'll never actually see.

SUPER MEAT BOY

FORMAT: PC, XBOX 360 YEAR: 2010 DIFFICULTY: 9

There's been something of a renaissance for sadistic platformers in recent years, with many indie developers taking cues from the great games from yesteryear to create levels so devious that you'll swear they're actually impossible. But while so many troublesome vintage games tend to be hard through poor design – be it fallout from the quarter-hungry arcade developer generation, technical limitations of certain platforms or whatever – this new breed is tight, fair and dangerously sadistic.

Like fellow Flash game *N*, *Meat Boy* started life in browsers before the guys behind it saw fit to take things up a notch. A more stylish twist on the maddening but oh-so-addictive high-speed hijinks of *N+*, *Super Meat Boy* is one of the great platformers of the modern age. As with so many games of its ilk, a quick glance at a level and a couple of early failures will often be enough to send you running off with your tail between your legs, while expert players manage to make the same stage look like the easiest thing of all time. It's pure skill all the way, from jump height to navigation to seeking out dangerous and quicker ways to reach the goal.

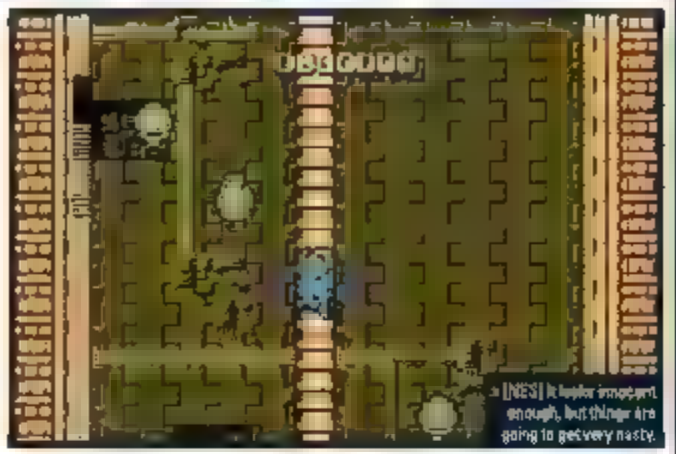
That's not even your only target here, either. Many levels feature collectible bandages or hidden warp zones (which lead to brilliant retro-themed bonus stages) but reaching these is often made incredibly difficult – bandages in particular are a nightmare as you still need to reach the goal after grabbing them for them to be added to your collection. On top of all that, dominating a level will unlock a much harder Dark World variant, usually littered with more spikes and saw blades than safe areas.

HARDEST GAMES OF ALL TIME

MEGA MAN

FORMAT: NES YEAR: 1987 DIFFICULTY: 8

Capcom's *Mega Man* is another title that had NES owners howling with frustration. While it boasted smart level design, it also featured insanely tough bosses, evilly placed hazards and spectacularly tough jumps. It was hard enough simply getting through a stage in one piece, but once you reached its end you faced an even tougher challenge. While the bosses of *Mega Man* are varied and full of character they are also extremely punishing, having brutal attack patterns that need to be learned. Even then you'll have a hard time of it, with *Mega Man*'s inability to duck turning him into an easy target. Defeating an enemy earns his weapon and here the game gets a little easier (only just, mind) as attacking bosses in certain combinations (you can choose which level you start on) gives you a slight advantage. It remains challenging and things didn't get any easier for its numerous sequels.



F-ZERO GX

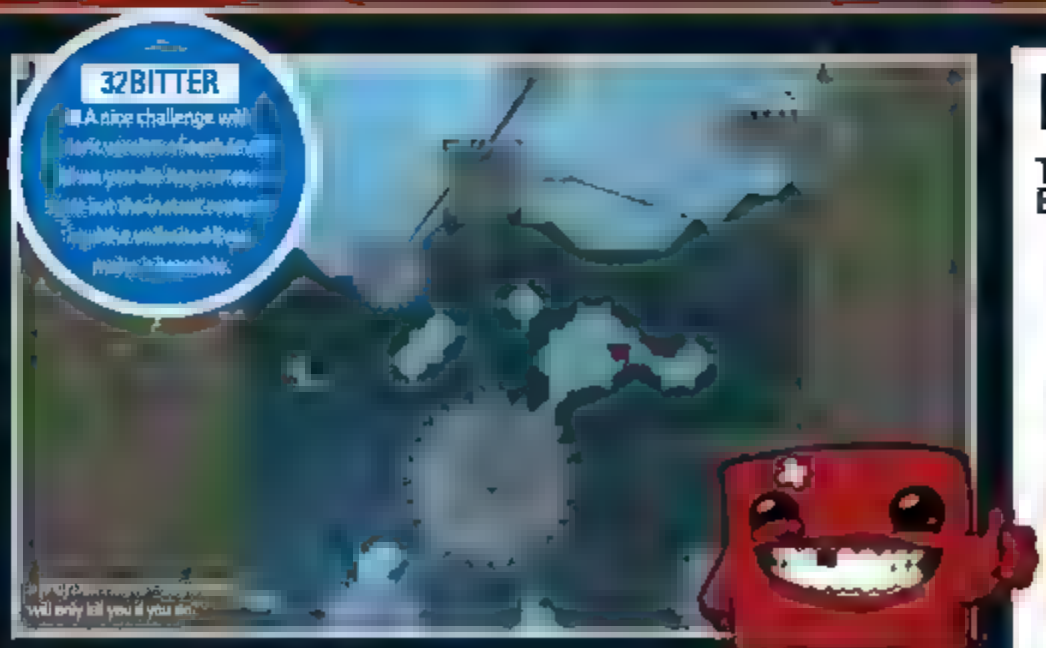
FORMAT: GAMECUBE YEAR: 2003 DIFFICULTY: 10

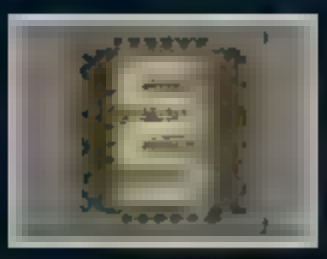
A racing game? Really? Oh yes. And if you've ever played (or even *seen*) *GX*'s Story mode, you'll know exactly why. This series of missions-based races is tricky from the start but by the time you reach the tail end of the campaign, you're looking at a restart every time you even *think* about making the slightest of mistakes. Spinning out on the 20th lap in a GT Endurance race is one thing, but this constant string of do-overs just feels impossible at times.

PRINCE OF PERSIA

FORMAT: VARIOUS YEAR: 1989 DIFFICULTY: 7

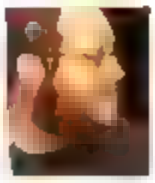
We were surprised by the number of people who brought up Jordan Mechner's classic platformer when we started discussing tough games. Thinking back, though, there were indeed quite a few devious traps and puzzles – from falling ceiling tiles to well-disguised switches – that made it quite the trial-and-error affair at times. The harsh time limit is also a factor, limiting play-time rather than lives and as such potently allowing setting up situations in which the game became impossible to finish.





INTERVIEW

Talking tough with Team Meat super-duo Edmund McMillen and Tommy Refenes



Were you concerned about the game being difficult through bad design?

"I think the reason why *Mario* and *Ghosts 'N Goblins* and all those games were so difficult back then and that their design was more frustrating than difficult was that all those people had previously developed for back then was arcade. With *Meat Boy* we took the penalty down to zero but kept the difficulty really high. In fact we could push the difficulty much higher because of that reduced penalty and frustration."

Where did the idea for showing multiple deaths in replays come from?

"There was a video of a hacked SNES emulator where this guy was playing *Super Mario World* and it would take all of his recordings and layer them over one another and I was like, oh I could do that in real time! , so we did. It was just a neat thing, and a good reward too.

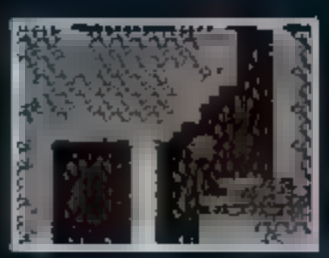
RICK DANGEROUS

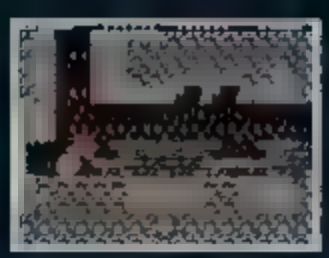
FORMAT: VARIOUS YEAR: 1987
DIFFICULTY: 8

Cheap deaths are something that don't come up all that much elsewhere on this rundown. They're naturally a negative, seen by some as lazy design rather than the kind of pure challenge a gamer really wants to take on. Core Design's *Rick Dangerous* games were met with mixed reviews due to this emphasis on trial and error gameplay – where boulders, spikes or later lasers could come out of nowhere to punish players who had done nothing wrong bar not having played a level before. But regardless, we still have fond memories of both games, the playful approach and design of the *Rick Dangerous* duo making such deaths feel more like slapstick jokes than actual punishments for failure – the gaming equivalent of an exploding cigar or a hand buzzer, and you quickly learn not to accept either.

The problem comes from the fact that such hazards are in no way telegraphed. At least in *Prince Of Persia* you'll see a floor panel shake before it dumps you down to a spiky grave, or a roof section wobble before it clatters you on the head. Here, there's no chance to react to many hazards naturally – if you don't know they're coming, you're dead. Generally speaking, skilled players should be able to sight-read a level, as is true of pretty much every classic *Mario* game and even newcomers like *Super Meat Boy*.

In addition to cheap deaths, though, the games are also examples of offering players extremely limited resources in the form of bullets and bombs. *Spelunky* riffs on this brilliantly, even if the procedurally generated levels don't always offer a way out if you've been overly reckless with supplies. It's a staple of modern survival-horror games too, ensuring a level of tension which, when coupled with the threat of unexpected death with every step, makes for an unforgettable mix. Unforgettable for the wrong reasons, perhaps. But the fact that we're still thinking, talking and grumbling about *Rick Dangerous* 25 years on means that Core must have done something right.





INTERVIEW

Simon Phipps – Rick Dangerous developer– talks temples and traps

Did you intentionally make *Rick Dangerous* difficult?

We didn't set out to make *Rick* any more difficult than any game of its time. Back then, the expectation of most games from *Jet Set Willy* to *Monty Mole* was having a limited number of lives and it was only the most talented of players who would ever beat the game. We simply went into *Rick* with the intention of making a game that, for the first time we thought, would capture that feeling of the opening sequence of *Raiders Of The Lost Ark* – you're going into the ancient temple with nothing more than a handful of bullets and your wits – you have to be constantly watching where you step because at any moment you could spring a trap that's been ready to trigger for a thousand years.

Many feel too much of it is down to trial and error. Would you agree with this?

If we'd known what we know now about game design, we probably wouldn't have made the game like we did and would have missed on making it the kind of game that folks still write to me about 25 years later.

You see, in *Rick*, in our eagerness to try and create that *Indiana Jones* feeling of the unpredictable we broke pretty much every 'rule' about predictable game mechanics that's been written since. As we've learned over the subsequent years, the best approach for most games is to present the player with an object, teach them the rules about it and then reuse that object in the same consistent manner for the rest of the game. *Rick* doesn't do that.

Hmmm... perhaps I'm being a little harsh on myself here – I think what's more the case is that we created a set of mechanics that were predictably unpredictable, if you will: so for example, you'd always see where a blow dart might be coming from, but precisely when it would be fired at you, you wouldn't know.

But yes, there are quite a number of traps that you have to learn about by narrowly missing them in that binary *Dragon's Lair* manner where one path leads to death, the other the way forward. The only way through those is by getting lucky or by trial and error... I think we had far less of those in *Rick 2*.

What I've found interesting looking back over two decades later is that we made effectively an action-based memory game that looked like a regular platform game.

How hard is it to get difficulty balanced on titles like *Rick Dangerous*?

Getting the difficulty balance is always incredibly difficult. When you're making a game you're playing it every day. You play it so often you learn to unconsciously compensate for the quirks in its controls, to work around them without being aware of it.

But that's not the limit – you have more than the insider information about what's coming up in the game, you can visualise where every trigger, every spawn, every collision boundary is, so it becomes impossible to experience your own game as anyone who doesn't work on the dev team would.

GHOSTS 'N' GOBLINS

FORMAT: VARIOUS YEAR: 1985 DIFFICULTY: 9

What, you thought you might get all the way through a feature about hard games without seeing a knight in his pants? Please. Capcom may have had do ar signs in its eyes when it released the origina game nto arcades but it wasn't unt the home ports came a ong that many of us had the time (or money, for that matter) to discover that th s wasn't just another credit hoover – this s a game where ski is everything and insurmountab e as the challenge seems, it s perfectly possib e with the right combination of knowledge, gear and reflexes.

This game and ts follow-ups also introduced us to another Capcom staple, namely repetition. As f finishing the game once wasn't enough of an ordea , beating the ast boss (and with the right sub-weapon no less) wou d cast poor Arthur back to the start of the game for an even more arduous slog through the same demonic stomping grounds in the search for the 'true' ending should you manage to clear the more taxing second run. Ever since, pitting players against the same bosses on mu tiple occasions has been a staple of Capcom games, with everything from *Resident Evil* to *Okami* staying true to the template.

Th s is one of the earliest examp es of a harsh-but fair game and even though the trials ahead might be enough to scare even the mightiest warriors out of their armour, you only have to watch a decent speed-run to see how ski centric *Ghosts 'N' Goblins* actually is.

AIRWOLF

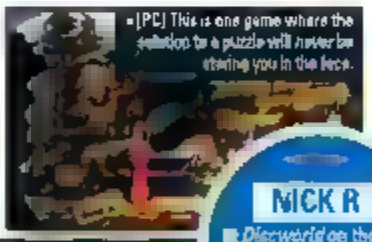
FORMAT: VARIOUS YEAR: 1984 DIFFICULTY: 8

It was a toss-up between this and *Top Gun* on NES for this slot (seriously, did anyone ever manage to actually land on the carrier?) but with no less than three equally vicious *Airwolf* games, the aerial *Knight Rider* won out. The or g na home computer version tasked players with rescuing five hostages (read: the same hostage five times) with the many hazards speeding up and becoming even more dangerous with each successful evacuation. By the end, it demands split-second timing and perfect flight control, though the payoff is hardly worth it. The sequel was a more traditional side-scrolling shooter and again we saw a hideous level of difficulty, while the NES game was pretty much just a mess – a 3D shooter on a platform that clearly couldn't cope with being stressed in such a manner.

DISCWORLD

FORMAT: PC, PLAYSTATION YEAR: 1995 DIFFICULTY: 8

Obtuse puzzles are far from rare in point-and-click adventures, but this might just be the moment the genre broke down. *Monkey Island* wasn't without its fair share of eyebrow-raising so ut ons but here, og c was exiled forever to free up a seat for the crown prince of zany humour. While puzzles that cou d be easily deciphered had been the downfall of the genre, taking things to the other extreme as *Discworld* did wasn't exactly the best solution – if you managed to get through the game on your own steam without the repeating dialogue driv ng you Insane, we doff our wizard hats to you. It's like they made an entire game to the same level as *Gabriel Knight 3*'s ridiculous d sgu se puzzle, and while it's in keep ng with the source materia that doesn't make t any less painfu



NICK R

■ *Discworld* on the PC

LITERALLY IMPOSSIBLE

Meet the games that just can't be completed...

GRAN TURISMO 2

■ Several drag racing events were apparently pulled from the game late in development, meaning that it's impossible to get 100 per cent completion in the first run of copies. After spending so many hours getting close, this revelation was somewhat disappointing.

SPACE STATION SILICON VALLEY

■ Another glitch-based frustration – one particular trophy cannot be collected, meaning that full completion (and the associated bonus level) are inaccessible without cheat codes. Does nobody test these things?

IMPOSSIBLE MISSION

■ Due to random spawning, it's possible for crucial items to be placed entirely out of reach or for punch cards to be used in unintentional combinations that make the game unwinnable. It's rare, but it can still happen.

JUST CAUSE 2

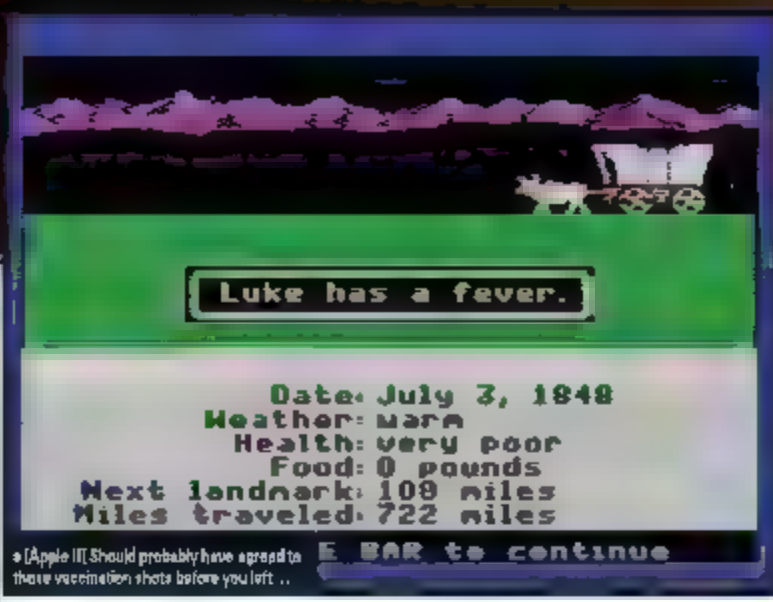
■ As with *Gran Turismo 2*, several missing pieces of content prevent players from hitting that satisfying 100 per cent completion rating. There's an unofficial patch available for the PC version that fixes this, but that's about it.

JET SET WILLY

■ In its original release, a number of bugs existed in Matthew Smith's *Manic Miner* sequel that could actually prevent the game from ever being finished, corrupting several areas of the game and at times interfering with enemy placement.

PAC-MAN

■ Probably the most famous of the lot, *Pac-Man*'s killscreen prevents play (well, accurate play – you can still guess your way through the glitches) after reaching level 256. Not that it would have stopped otherwise, but still.



▲ (Apple II) Should probably have agreed to those vaccination shots before you left ...

THE OREGON TRAIL

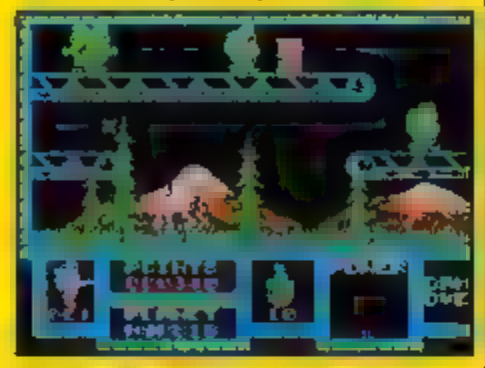
FORMAT: VARIOUS YEAR: 1971 DIFFICULTY: 9

What is an educational game doing on a list of the toughest games ever made, you ask? Well, this one is different the point of the game was never to 'win', rather to learn about the impossible odds American pioneers were up against. No matter how hard you try or how well you think you're doing, one nasty bout of dysentry and it's all over. Educational title or no, this still remains a landmark title in changing the gaming rulebook and horrible as it is, we're glad it happened without it, we wouldn't have been blessed with excellent parodies and pastiches such as *The Organ Trail* and *Super Amazing Wagon Adventure*.

GAME OVER

FORMAT: VARIOUS YEAR: 1987 DIFFICULTY: 10

Not all games on this list are equal. Some are harder through clever design, others through devious design but this one we... it's just got to be put down to poor design, really. Dinamic's games *were* pretty much a... equal though, at least in the sense that they were generally borderline impossible. Between chaotic movement of both character and enemies, a barrage of unpredictable enemy attacks and some horrible colour clash confusing matters further, *Game Over* truly lives up to its name – if the objective was to simply kill the player off then Dinamic made the perfect tool for the job. The studio also gave us the equally horrible *Freddy Hardest*. Endure *Freddy Hardest* to the end and your reward is just a text screen, which reads 'Too good to be true you lousy playboy' totally worth it.



▲ (ZX Spectrum) And you thought *Freddy Hardest* was tough.

HARDEST BOSSES

We can hardly bear to look at this horrible lot

QUEEN LARSA (MUSHIHIMESAMA FUTARI)

■ Bullet hell shooters aren't exactly known for being accommodating for their players, but this final boss just takes the piss, no two ways about it. For most of the fight, you can't even see the screen for the blanket of bullets you need to avoid, and she doesn't exactly go down quickly either.

HOW TO BEAT

■ Without a perfect awareness of your exact hitbox and knowledge of where and when to use your special attacks, this fight might as well be impossible. Play it on free-play and you'll eventually get by via brute force, but dodge like a pro and you might just ICC her. Who are we kidding? That's literally never going to happen.

DR ROBOTNIK (SONIC THE HEDGEHOG 2)

■ Sonic's portly nemesis has already been dispatched several times by the time you reach the Death Egg zone, but this final trial is the toughest of the lot. With no rings to save you and a Metal Sonic battle immediately before it – a single hit will send you all the way back to the beginning of the area.

HOW TO BEAT

■ Metal Sonic is the first hurdle, but he's easy enough once you master the art of landing two barrages of four attacks when he appears and as soon as he crosses the screen. Robotnik, meanwhile, is a pain, not least due to collision bugs. Stick to patiently attacking the lowered head after he jumps and you should be okay.

KINTARO (MORTAL KOMBAT 2)

■ Midway's gory fighter isn't exactly known for its balancing and sure enough, this striped sub-boss (yep, he's not even the main guy) is a broken mess. He can throw you out of pretty much anything and kill you in a couple of hits. Lord knows how many controllers this guy has cost the gaming world.

HOW TO BEAT

■ Pick Sub-Zero and freeze then batter him. Or pick Scorpion and spear then batter him. If neither ninja option is up your street, be prepared for an arduous fight where your best bet is getting lucky. Oh, and never beat him in the first round. Fighting game bosses *hate* when you do that, and tend to react accordingly.

ORNSTEIN & SMOUGH (DARK SOULS)

■ Having struggled through leaking dragons, lethal sewers and towering demons, From's game throws out the rulebook late in the game to set you against two bosses at once. It's one of the most challenging battles in all of gaming, but the sense of accomplishment when you finally achieve victory is unmatched.

HOW TO BEAT

■ Single one of them out (the order in which you beat them dictates the rewards) and don't lose focus. Keep your guard up and be ready to roll at a moment's notice. Or just equip some heavy armour with high Poise and tank your way through them one at a time. These guys have ruined lives – don't let them claim yours.

DARK SOULS

FORMAT: PC, PLAYSTATION 3, XBOX 360
YEAR: 20[illegible] DIFFICULTY: 5

In an era where accessibility and empowerment have become all-important, *Dark Souls* – like *Demon's Souls* before it – is a beacon of hope. Its success proves that not every gamer wants their hand held and that many people are still happy to fail over and over again so long as the sense of improvement and satisfaction are worth it. From Software absolutely nails this with the *Souls* games, generally managing to avoid the kinds of cheap deaths that were more common in spiritual predecessor *King's Field* while finding new ways to ramp up the difficulty at every turn.

The opening alone is a good enough reason to include *Dark Souls* on this list, with the first boss stomping in from pretty much out of nowhere before the brief tutorial has really had a chance to begin. Rude as it may seem, this teaches you an extremely important lesson about the game – take nothing for granted and be ready for anything. And it isn't even just about tough bosses, either. Many of the later regular enemies can put you down in a hit or two if you let your guard down, plus even the game's structure is punishing. The open-world approach means it's easy to head the 'wrong' way and get battered by enemies you're nowhere near prepared for, and knowing when to cut your losses and run is key. But with those hard-earned souls piling up where you last went down, greed will often get the better of common sense and the appropriate price will be paid.

Few games demand such dedication and constant attention as *Dark Souls* and while death will still be frustrating, learning from it is part of the *Souls* cycle. And as if the regular enemies and bosses weren't harsh enough, the constant threat of invasion by other players while online makes for some of the most exciting hardcore gaming in years. If you're looking for your next challenge and still haven't ticked off all three *Souls* games, we heartily recommend you do so. Yes, you'll die a lot. And yes, you'll get quite angry at times. But try telling us that it wasn't worth it after that 'Victory Achieved' message pops up and you're left punching the air and high-fiving yourself.

» [Xbox 360] *Dark Souls* helped make hard games popular again, and for that we should all be thankful. And furious. Both is fine.

> "Greed will get the better of common sense and the appropriate price will be paid"

THE ROAD TO DRANGLEIC

The gaming evolution that led to Dark Souls II, 2014's toughest game

ADVENTURE

■ An open adventure that offers little in the way of guidance, this seminal game would inspire an entire generation of designers.

KING'S FIELD

■ A gruelling slog through ugly early-polygon graphics, [illegible] and [illegible] enemies and traps. Sound familiar?

DEMON'S SOULS

■ Effectively a level-based *King's Field* game with the perspective pulled back to [illegible]

DARK SOULS II

■ The logical progression for the series: more deaths, better online, more deaths, more bosses and more deaths. Prepare to die indeed.

BULLET HELL

Few genres are as challenging as the shoot-'em-up. With this in mind, we revisit some of its toughest examples.

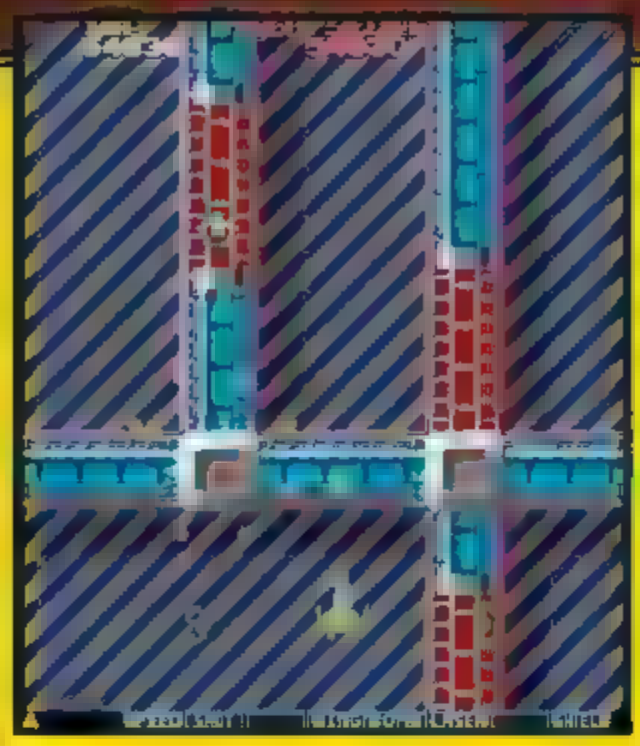
ROBOTRON: 2084

FORMAT: ARCADE YEAR: 1982 DIFFICULTY: 8

***Robotron* is the second Eugene Jarvis shoot-'em-up to make our feature, and it's not hard to understand why.** It distils the genre into its purest form and remains one of the finest – and toughest – twitch shooters of all time. Everything about *Robotron* is beautifully balanced, introducing a steady stream of suitably different enemies that require both skill and knowledge to defeat.

There are no power-ups, no special abilities – it's just you, those two intimidating joysticks and a seemingly never-ending supply of enemies to deal with. You'll get a brief couple of seconds at the start of each round to get your bearings, but you're then thrown into a chaotic warzone that will test your skills to their limits. Add in the brilliant risk/reward system in the form of stragglers who can be saved for cumulative points, and *Robotron* remains one of those rare games – a tough experience that always drags you back for one more go.

"There are no power-ups, no special abilities – it's just you"



SLAP FIGHT

FORMAT: VARIOUS YEAR: 1986 DIFFICULTY: 9

Toaplan certainly knows how to make tough shooters. *Slap Fight* is mainly memorable because of its insane ultimate power-up that turns your tiny fighter into an insane armada of death. Most mortals never get to experience the sheer power it offers, as they'll never survive long enough to witness it.

Slap Fight is insanely hard for a multitude of reasons. The enemies are frequent and painfully accurate, while ships will constantly sneak up and snipe you whenever possible. It's the lack of reach that really makes *Slap Fight* tough though. Your base bullets only hit halfway up the screen, meaning you're constantly dicing with death whenever you try to take down enemies. A truly tough challenge.

HELL FIRE

FORMAT: ARCADE, MEGA DRIVE, PC ENGINE CD-ROM YEAR: 1989 DIFFICULTY: 9

Toaplan's shooter is aptly named, as it's an absolute bitch to play. The real beauty of *Hell Fire* lies in its clever game mechanics, which evolve around a cleverly designed firing system. Your ship can fire forwards, behind, diagonally and up and down, giving you a tremendous amount of reach. The trick here of course is that you can only fire in one of the directions at a time, which turns Toaplan's game into a deadly juggling act where you desperately try to fend off waves of sneaky enemies that attack you from all sides. The Mega Drive version makes things slightly easier by equipping your ship with an additional power-up that spews fourth a deadly plasma bolt, but ultimately it remains an extremely punishing shooter that separates the men from the boys.

VIEWPOINT

FORMAT: VARIOUS YEAR: 1992 DIFFICULTY: 10

When we were asking readers about tough shooters, *Viewpoint* came up again and again. First released in arcades in 1992, it's notable for being isometric, featuring rendered visuals and for being bloody hard. Simply surviving the first level for many will be an achievement in itself.

One of the more interesting aspects of Sammy's shooter is that the environments are just as dangerous as the enemies and bosses. You'll often find yourself dodging fast-moving barriers or shooting gates in order to disable them as you battle across *Viewpoint*'s varied stages, and it becomes a reflex test as you weave through bullets, hazards and enemies.

THE HARDEST OF ALL FREDS

■ Ikaruga on the DC – I am crap at shoolers but Jimmy Charlie...

IKARUGA

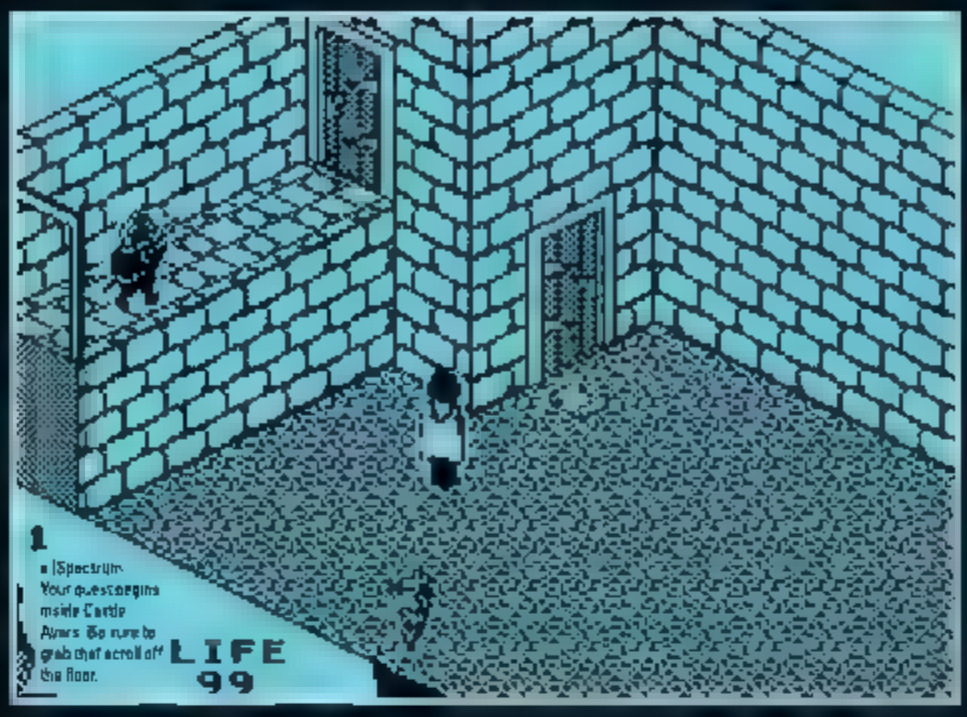
FORMAT: VARIOUS YEAR: 2001 DIFFICULTY: 9

***Ikaruga* is a tough game at the best of times, but it becomes almost impossible if you try playing it properly.** Like many classic shoot-'em-ups *Ikaruga* not only features great game mechanics, but also a highly polished scoring system. Polarity is the big thing about Treasure's spiritual successor to *Radiant Silvergun* and it's beautifully presented here.

The developer had already experimented with the concept of flipping between different polarities in *Silhouette Mirage*, but it's far more intelligently presented in *Ikaruga*. Your ship is black on one side and white on the other. The white portion of your ship can absorb white bullets but will get instantly destroyed by black ones, while the reverse is true for its black underside. The kicker here though is that enemies are destroyed more quickly by their reverse colours and that you need to shoot three enemies of the same colour to increase your multiplier. As a result you're continually switching sides, doing everything you can to keep your multiplier up, while avoiding an endless barrage of bullets. Brutal, but oh so brilliant.

Fairlight I & II

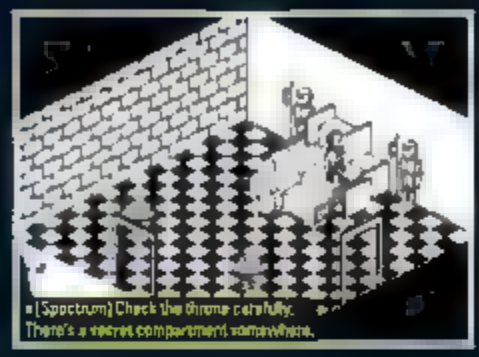
In early 1985, 23-year-old Swede Bo Jangeborg visited England for seven days and ended up staying for seven months. During this time he created Fairlight, one of the most memorable adventures of the 8-bit era. We spoke to Bo about making Fairlight, its controversial sequel, and why he never made another game



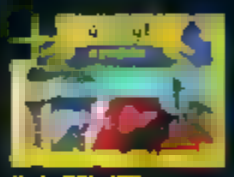
▪ [Spectrum] Your quest begins inside Castle Avers. Be sure to grab that scroll off the floor.

▪ Bo Jangeborg, the brilliance behind the *Fairlight* games.

▪ [Spectrum] Sometimes important objects are out of reach, but thankfully you can climb on objects to reach them.



▪ [Spectrum] Check the throne carefully. There's a secret compartment somewhere.



IN THE KNOW

- [illegible] (THE EDGE)
- DEVELOPER: BO JANGEBORG
- RELEASED: 1985-1986
- PLATFORM: VARIOUS
- [illegible] ADVENTURE

The origins of *Fairlight* can be traced back to two programs Bo Jangeborg produced shortly after acquiring a Spectrum in 1983: a graphics utility called *Grax* and a shoot-'em-up called *Shoot-'Em-Down*.

"*Grax* was basically a toolset for doing fill-ins, circles, lines and stuff like that," explains Bo. "It was a lot faster that you could do in BASIC. A friend of mine was interested in text adventures and wanted to have some still images in his game, so I developed the toolset to help him with that. And I kept on developing *Grax* and later on I used it to draw all of the backdrops in *Fairlight*."

Grax also became the foundation for *The Artist*, Bo's graphics package for the Spectrum. "When put together with a working interface, those tools made a decent little paint program," he says, before revealing how *The Artist* led to that elongated stay in the UK and ultimately the creation of *Fairlight*. "I got *The Artist* to a state where I thought some company might actually consider releasing it. I went over to England to get in touch with some companies and of those I spoke to Softek seemed interested. So we made a deal for *The Artist*, and while in London the Softek guys showed me what games they were working on. They were trying to emulate what Ultimate Play The Game was doing with *Knight Lore* and *Alien 8*."

As revealed in last issue's *Knight Lore* feature, Softek boss Tim Langdell and his outfit were struggling to copy Ultimate's groundbreaking Filmation system. Fascinated, Bo went back to his hotel and worked up a demo overnight. This is where *Shoot-'Em-Down* came in, as he appropriated the sprite routine he'd developed for his earlier game to create a smooth isometric effect. The guys at Softek were knocked for six. "I was supposed to be there for a week but they were so stunned by what I was showing them and how quickly I demonstrated how this kind of isometric 3D game could be done that we started working on *Fairlight* there and then. I actually stayed in England for seven months."

A few quick phone calls home were made to explain matters and that was that. He swapped Gothenburg for London and then London for the land of *Fairlight*. "I didn't have a full-time job at the time," he explains. "I had been planning to open a little computer shop in Sweden with a couple of friends, but that went on the

Top Tek

A selection of the choicest titles released by Softek over the years

FIREQUEST

SYSTEM: C64
YEAR: 1984

▪ This is a sequel to *UGH!*, the prehistoric romp that first gained popularity on the Dragon 32. These 'further adventures' give our caveman hero much more to do, with each screen offering up tricky challenges involving spiders, bats, volcanoes and angry storm clouds.

BRIAN BLOODAXE

SYSTEM: SPECTRUM, CPC, C64 YEAR: 1985

▪ A wacky platformer developed by Charles Bystram. It's silly but not particularly clever, although the option to carry objects and use them to solve puzzles does lift it above the rest. It's best remembered for its big, colourful graphics.

BOBBY BEARING

SYSTEM: SPECTRUM, CPC, C64 YEAR: 1986

▪ While often compared to *Spindizzy*, developers Robert Figgins and Trevor Figgins cite *Knight Lore* as their chief inspiration. The impressive isometric graphics system was clearly deserving of its very own daft moniker – Curvispace 3D!

INSIDE OUTING

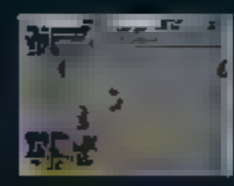
SYSTEM: SPECTRUM, CPC, C64 YEAR: 1986

▪ Also known as *Raffles* and the somewhat less snappy *Devon Aire in the Hidden Diamond Caper*, this classy release proved that isometric adventures could still entertain and even amaze when done well. You explore a large mansion in search of hidden jewels.

GARFIELD

SYSTEM: VARIOUS
YEAR: 1988

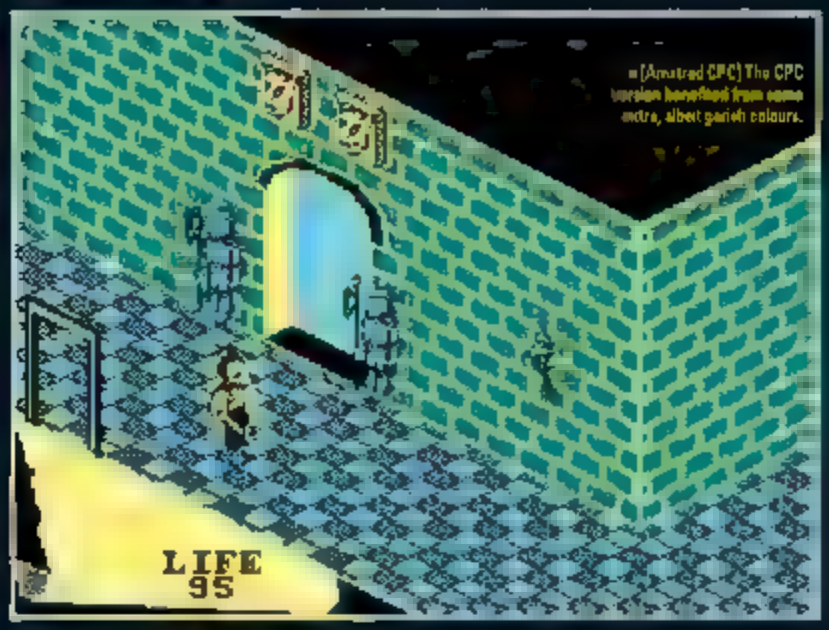
▪ A rather [illegible] saw Softek license the ever-popular cartoon cat for inclusion in a couple of games. The first, subtitled *Big Fat Hairy Deal*, is the pick of the two and succeeds in bringing the strip to life using large, detailed graphics and plenty of affable humour.



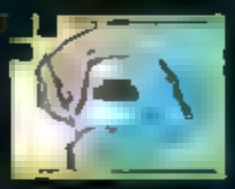
ALIEN SYNDROME

SYSTEM: VARIOUS
YEAR: 1988

▪ Softek released several coin-op licenses including Konami's *Shao-Lin's Road* and Taito's *Soldier Of Light*. This was one of the most successful coin-op hits on the C64. That said, all of the versions are admirably close to the arcade originals.



▲ [Amstrad CPC] The CPC version benefited from some extra, albeit garish colours.



DEVELOPER HIGHLIGHTS

THE ARTIST
(PICTURED)
SYSTEM: SPECTRUM
YEAR: 1985

FAIRLIGHT
SYSTEM: SPECTRUM, CPC, PCW, C64
YEAR: 1985

FAIRLIGHT II
SYSTEM: SPECTRUM, CPC, PCW
YEAR: 1986

backburner while I pursued this gaming career instead. I stayed with the Langdells at their house and went to work with them each day at their office in Covent Garden. All of *Fairlight* was written while I was living in London. It was a fun experience."

Besides providing Bo with a job and a place to stay, Tim Langdell also contributed plot elements to *Fairlight*. "We discussed things between us, but I basically did the game design and the story while Tim wrote the back-story for the booklet that came with the game." As for influences on the story, which saw our cloaked hero Isvar explore the mysterious Castle Avars in search of a magical book, Bo has nothing specific to cite. "I was into *The Lord Of The Rings* and all that stuff, but I can't point to any particular book or film. It was all from my imagination. I was always interested in games, playing board games from an early age. When I was around 16 I started playing *Dungeons & Dragons*. I'd been running a lot of role-playing campaigns based on *D&D* so I was used to being a dungeon master and I was thinking up adventures regularly before I even started using computers."

Fairlight is well remembered for its striking visuals and in this department Bo benefited from a little in-house help. "I did some of the graphics," he says. "But Softek had a contract with a guy called Jack Wilkes, who had actually been working as a plumber before. He was a really nice guy and really good with graphics, so he did a lot of the moving graphics, the animation. He did some nice things like the man-eating plants and the guards who disappeared into their helmets when you killed them, then popped back up again after a while. On the animation side I only did the main character."

Fairlight was released for the Spectrum in late 1985 (with Amstrad CPC, Amstrad PCW and Commodore 64 versions arriving the following year, although Bo had nothing to do with these ports). The game garnered great press, particularly from *Sinclair User* magazine, which heaped praise on the graphics, lauding them as "streets ahead of *Knight Lore* and *Alien 8*". Not bad when you consider that it was precisely these two games that Softek had being trying to replicate in the first place.

▲ Classy and understated packaging was part of *Fairlight*'s charm.

Unsurprisingly, that succulent quote made it onto the game's inlay.

Also gracing the inlay in prominent fashion was Bo's name, in fact, the game was effectively titled 'Fairlight By Bo Jangeborg'. So prominent was his name that it clearly overshadowed both Softek and The Edge, the label on which the game was released. The ensuing success of the game ensured that Bo's name became ingrained in the gaming consciousness.

Bo was clearly a key asset for Softek and this would eventually lead to a falling out during the development of the *Fairlight* sequel. "*Fairlight II* is where my problems with the Softek guys really started," he says. "Before the game was completed they tried to have me sign a long term contract with them, which I wasn't pleased with as I hadn't been all that pleased with how the relationship was developing towards the end of *Fairlight*. I was maybe looking at going to some other companies. We had made a deal right from the beginning that I would get straight royalty payments. I didn't get anything up-front, so they withheld royalties I was due to try and force me into signing a contract with them. I basically said 'screw them!'"

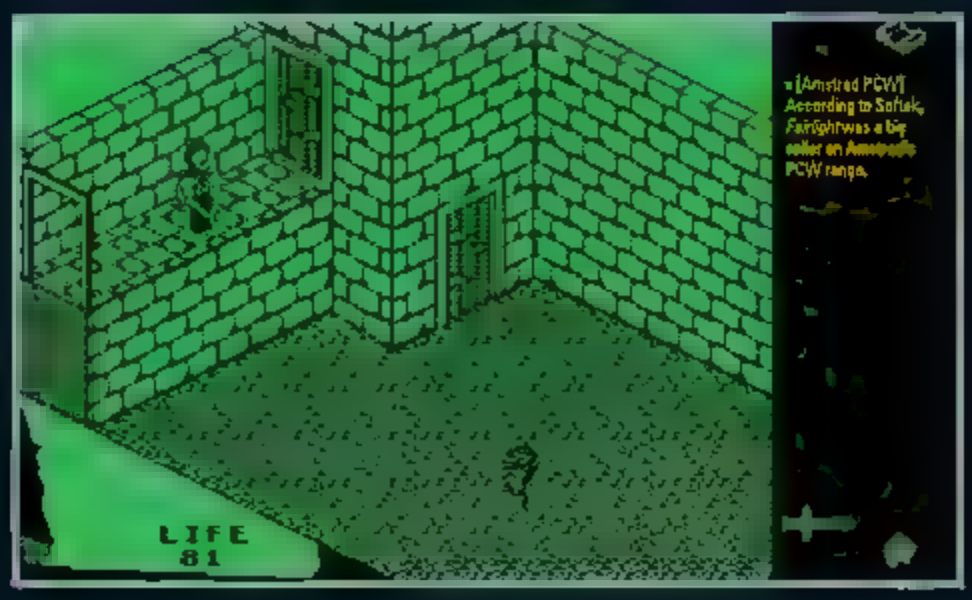
A legal battle began but it never made it to court. "I had to deposit something like £5,000 in the British courts just to be able to pursue the matter which was a pain. In the final settlement we agreed that, in order for me to get anything out of them at all, I signed over the rights to the *Fairlight* name. This is something I now regret. It was done as a mediation but I wasn't too happy with the deal. With hindsight it would have been better if I'd given up the money and retained the rights."

Prior to the legal wrangles, *Fairlight II* was shaping up as an ambitious follow-up that was far more expansive than the original. It was designed with the Spectrum 128K computer in mind – on 48K models it was split into two parts that loaded separately. Bo opted to return to his home country to begin crafting the sequel. "For *Fairlight II* I was working with a graphic artist back in Sweden, a friend of mine named Niclas Osterlin. I did most of the game in Sweden then came over to England for the last few months to finish it off. The plan was to make it more of the same, but make it bigger and better."

Sadly the contract dispute began before the game was properly finished. "There was a couple of weeks' work left on the game to iron out the last few bugs and get it released," he reveals. "But when the relationship fell apart no more development was done on it and they released it anyway. They knew full well that the game wasn't in a finished state."

In its released form, *Fairlight II* featured a number of minor glitches but the game-breaker didn't occur until the very end. Basically there was no way of opening the locked door that led to the final room, and therefore it was impossible to complete the quest. As this bug occurred at the conclusion, reviewers were unaware and the game received strong reviews when it arrived at the end of 1986. *Sinclair User* called it a "stunning and epic sequel".

The fallout also ensured that the proposed *Fairlight III* and possibly further sequels were scrapped. This is something that Bo regrets. "I wanted to return to *Fairlight* and I had plans on going a lot further with that world, expanding on it and making it into more of a proper role-playing series. There wasn't a specific plan on doing a set number of games but I would have probably continued making a lot of games using that system had I kept developing it. That was clearly an idea at that point and who knows where that would have ended up. It would have probably been a mixture of isometric 3D and ideas I'd picked up from the *Ultima* series. Maybe even opening it up so that other people could use it to develop games too. Who knows?"

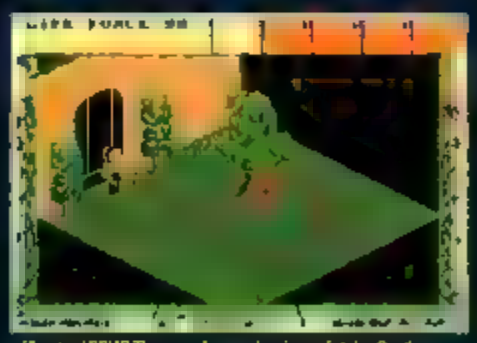


▲ [Amstrad PCW] According to Softek, *Fairlight* was a big seller on Amstrad's PCW range.

Softek later released *Fairlight: The Legend* on the Spectrum and Amstrad CPC, although this was just a cut-price collection of the two titles. Bo meanwhile began work on a new Spectrum project for Nexus Productions, a publisher that had links to Telecomsoft. Called *Resolution*, the game was an ambitious *Defender*-style shooter that used programming tricks to reduce the colour clash effect. "I had a working demo but in the end that company fell through. I got quite disillusioned with the business at that point and I couldn't get around to finishing the game."

And so Bo walked away from the industry in which his name had become well-known and respected. He continued programming and later developed *Flash*, a paint package bundled with the SAM Coupé in 1989. Since then he has worked on business admin software and has no desire to get back into gaming. "Time has run away in a sense," he admits. "You need a company and really good resources behind you and I don't feel like my programming skills and my willpower are quite there anymore. I did have a go at doing a strategy game a few years ago because I felt that was something I'd be able to do on my own but that didn't pan out. I probably still could do that but we'll see what happens. You never know."

But there's still *Fairlight*. Always *Fairlight*. A game that began life as a clone but evolved into a rich, atmospheric classic in its own right – something that fans are keen to remind Bo of. "I still get a few emails from players each month and I really enjoy that," he says. "It has always been pleasing to receive feedback about the *Fairlight* games, to hear that people played them and enjoyed them."



▲ [Amstrad PCW] The sequel opened up immediately after the events of the first game, with Imrz standing outside the castle.

▲ [Spectrum] Here it is – the glitchy, unlockable door through which none shall pass.

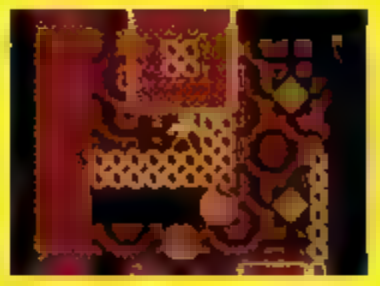
The End is Wry

Five games which, like Fairlight II, were impossible for players to complete due to bugs

JET SET WILLY

SYSTEM: SPECTRUM YEAR: 1984

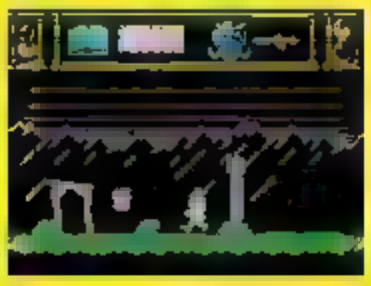
■ As bugged games go this is perhaps the most infamous. The rush to get the game out the door resulted in several bugs, one of which prevented you from completing the game. The Commodore 64, BBC Micro and Dragon 32 versions were also unfinishable.



REPTON 2

SYSTEM: BBC/ELECTRON YEAR: 1985

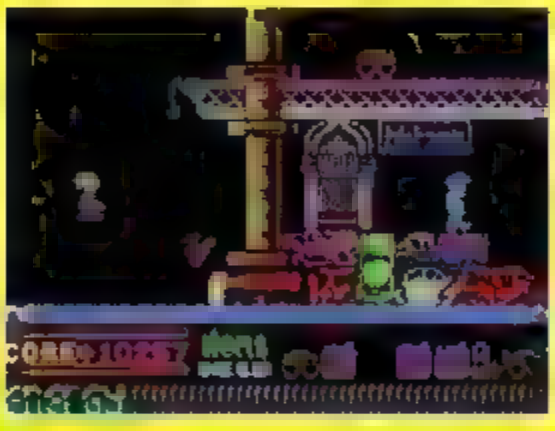
■ This sequel was made impossible by a placement bug which meant that one of the diamonds could not be collected and therefore it couldn't be completed. Awkwardly, Superior Software offered a cash prize to the first person to finish the game.



HEARTLAND

SYSTEM: SPECTRUM YEAR: 1986

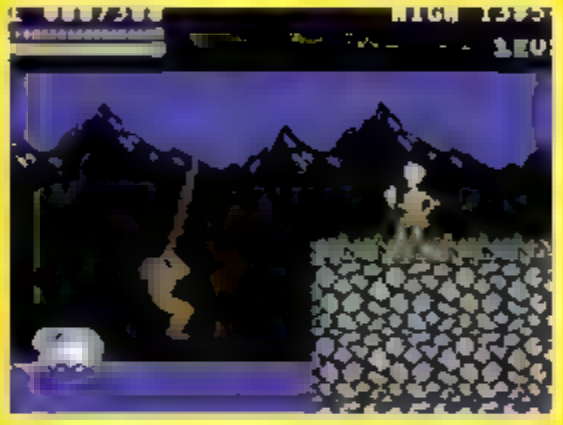
■ This Odin release suffered from a brilliantly ironic bug. The plot involved gathering up six pages that had been torn from a book, yet when you grabbed the final page so that the story's conclusion could be finally revealed, the game crashed!



DYNAMITE DAN II

SYSTEM: SPECTRUM YEAR: 1986

■ Not so much a bug, but the game's in-way mentioned that you needed to blow up Blitzen's base on the final island using a bomb. While there was a bomb, there wasn't anywhere to plant it and the game just looped back to the beginning.



RASTAN

SYSTEM: COMMODORE 64 YEAR: 1987

■ Anyone who played this conversion will remember the rather problematic rope swings where split-second timing (and a dollop of luck) was required. Yet there was one bugged swing that was simply impassable, resulting in a big fat fail every time.

▲ [Spectrum] The *Fairlight II* end-screen seems to show the evil Dark Lord fly away...

The Making of GOLDEN AXE

Inspired by the antics of an oiled-up Arnold Schwarzenegger, Sega's Golden Axe was one of the first scrolling beat-'em-ups with a Western-style fantasy setting. We went behind the scenes with creator Makoto Uchida

IN THE KNOW

- **PUBLISHER:** SEGA
- **DEVELOPER:** SEGA
- **RELEASED:** 989
- **PLATFORM:** ARCADE, VARIOUS
- **GENRE:** SCROLLING BEAT-'EM-UP

Here's a fun question for all you retro-heads... which came first, *Final Fight* or *Golden Axe*? Both made their appearance in arcades in 1989, but it might surprise some to find that *Golden Axe* appeared a few months before Capcom's brawler, in the summer of that year.

While *Final Fight* was a more influential and arguably more polished title, and the template for the myriad of clones that followed it, Sega's fighting fantasy perhaps had the more visually engaging theme. With its axe-wielding warriors, scantily-clad Amazonians and dragon-riding adversaries, *Golden Axe* evoked the stylings of Hollywood B-movie cult classics like *The Beastmaster* and *Conan The Barbarian*. Its fiery, magic attacks that cut through baddies like a coin-op apocalypse were a novelty the likes of which had never been seen, and its background design, with turtle-back villages and scraps on the back of giant eagles, felt fresh and, let's face it, looked extremely cool. After all, Mayor Mike Haggar never got the thrill of jumping on the back of a chicken-leg monster and bashing a couple of sword-wielding skeletons to death (again) with its tall.

Golden Axe was the second Sega arcade game project from Makoto Uchida, following his mythology-inspired brawler *Altered Beast*. "When we reached the final stages of the development of *Altered Beast*, our boss asked our team to come up with a new game," he recalls. "The given proposition was an action game that ran on *Altered Beast*'s System 16 arcade board, with similar gameplay to Technos' *Double Dragon*, which was a popular arcade game at the time. My idea was to come up with a *Double Dragon* that was not a *Double Dragon*. Technos was an experienced rival who had been working on the *Kunio-Kun* series, so there was no way we could compete if we did the same thing as them. I had a feeling that arcade games should be competitive against the great hit console title *Dragon Quest* created by Enix) and therefore studied the world of magic and swords, combined this with the gameplay of *Double Dragon*, and finally came up with the concept of *Golden Axe*."

What emerged was a East-meets-West vision of high fantasy, sprinkled with a little of the spirit of Enix's role-playing game, along with liberal helpings of pulp and classic American and European influences. This offered a welcome and refreshing change to the murky ghetto-like stylings of *Renegade* and *Double Dragon*. "My father loved action movies and I used to watch them with him," Uchida tells us. "During the development of *Golden Axe*, I rented a video of *Conan* and watched until the tape was worn. Of course I was also inspired by *Lord Of The Rings*. I bought many illustration works based on Middle-Earth and used them as reference materials if I could, I would vote Gandalf for president."

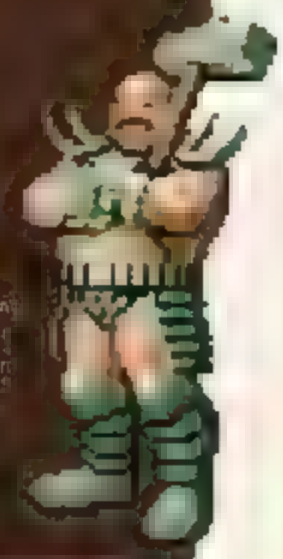
Although the game's plot is hardly Tolkien, it's a reasonably entertaining premise in a cheesy midnight matinee kind of way. In ▶

GILIUS THUNDERHEAD

KNOW YOUR ENEMIES

ALEX

■ They've already lost parents and siblings to Death Adder, but losing their friend Alex is the final straw for our three heroes, who head off to avenge him as soon as he dies.



BAD BROTHERS

■ These two bald giant brothers are the first bosses you encounter and are more than happy to crush you with their huge hammers. Nasty.

HENINGER

■ All scrolling fighters need throwaway cannon fodder and Heninger fulfils his purpose admirably. Fortunately he's quite easy to beat.

LONGMOAN

■ Another fodder [illegible] surprisingly easy to beat. Watch out for his sneaky shoulder charge and bring him down quickly.

BITTER KNIGHT

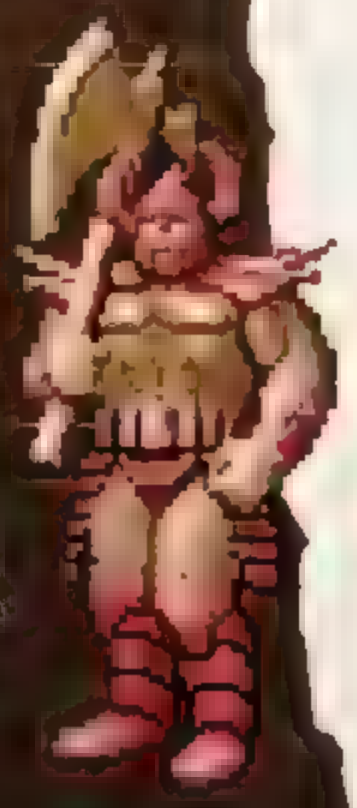
■ This huge boss has a deadly dangerous reach and can easily take you down with a single swipe of his sword or shield.

STORCHINAYA

■ This beautiful Amazonian can put up a tough fight and dishes out a surprising amount of damage. Is often encountered on a bizarrian to begin with, but can easily be dismounted.

SKELETON

■ Clearly inspired by the work of Ray Harryhausen this skeletal foes are absolute buggers to defeat and have a wide range of extremely dangerous attacks.



DEATH ADDER

■ This is it, this is Death Adder and he's as deadly as his name suggests. In addition to wielding the Golden Axe of the title, he's always surrounded by skeleton miniens and has some devastating magic. Your best bet it to wedge him against the side of the screen and wail on him.

▶ the fantastical realm of Yuna, a fiendishly intimidating villain named Death Adder has captured the King and his daughter, and has imprisoned them in their castle. He's also got his evil mitts on the Golden Axe, the magical emblem of Yuna, and threatens to destroy the royal family and their precious heirloom unless the populace accept him as their divine leader. So begins the quest of three mysterious warriors, each with a score to settle with the Dark One, who set out on a quest to free Yuna and seek their revenge.

From the start, Uchida's team opted to mirror *Double Dragon* in providing support for two simultaneous players, with a choice from three suitably buff characters – a lead male barbarian, Ax Battler, a female Amazon, Tyris Flame, and a dwarf, Gilius Thunderhead, possessor of the game's most aggravating-looking weapon – "I thought that the balance of having one hero and two support members was best comments Uchida. "We differentiated the support characters by changing their abilities. One who is superior in using magic (Tyris) and the other who is not so good with magic, but strong in melee combat (Gilius)." Given that there were three playable characters though, did Uchida's team think about adding three-player support at all? "We did consider that plan, but we gave up due to the hardware specs." [illegible] maximum number of characters, including the enemies that we could display and operate at once was six. But by the time we created the next title *Revenge Of Death Adder* the hardware specs had allowed us to make the game playable for up to four players simultaneously."

As a genre scrolling beat-em-ups are by nature fairly simplistic and repetitive, something that still applies to modern titles like *Castle Crashers*. But Uchida's team made an effort to vary the standard attacks from slashing blades and throws to bashing baddies on the head with the hilt of the hero's sword, complete with a satisfying clunking sound. Double-tapping

GOLDEN MOMENT

ALEX

#2

THEY KILLED ALEX...

■ Were not sure Makoto Uchida's something against Sega mascot Alex Kidd, but *Altered Beast* features gravestones bearing his name and [illegible] person to die is called Alex. Perhaps it's just a coincidence.

■ Arnadel A rampaging chicken-leg monster about to take out Ax's sneecaps

■ Arcadel Ax and Gilius arrived at Turtle Village just in time for a barbecue

BOX BATTLES

Sega's classic brawler had a range of interesting looking covers...

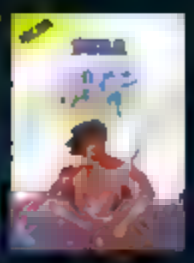
GENESIS
■ Why does Ax Battler look like Conan? Why is he holding an axe? Why do we care so much? Very poor.

[illegible]
■ Yes it's heavily inspired by *Conan*, but at least it ties in with the actual game and is fairly authentic. A much better effort.

MEGA DRIVE
■ It's clearly been inspired by *Master Of The Universe*, but it doesn't stop it from being awesome.

PC ENGINE CD-ROM
■ A straightforward representation of *Golden Axe*'s title screen doesn't prepare you for the horrors on the disc.

PS2
■ This is easily the best part of Sega's shocking update. Special points for the giant eagle too.



MASTER SYSTEM
■ A very authentic representation of the barebones content found inside.

> "During the development of Golden Axe, I rented a video of Conan and watched until the tape was worn" Makoto Uchida

the joystick allowed for a shoulder charge or flying kick, while attacking in mid-air pulled off a powerful diving weapon smash that was tricky to time right but highly damaging if it caught an enemy off-guard. One of the game's most notable signature moves was the backward spin attack, when pressing both attack and jump buttons together whirled your hero around 180 degrees to hack at an enemy behind you. This was particularly useful when enemies surrounded you.

While *Golden Axe* was one of the games that pioneered the concept of the weapon-based brawler, this added a few other design restrictions, as Uchida explains. "The general gameplay for action games is to carefully observe the distance [from] your enemy and to attack in the correct timing. It is very similar to hitting a ball with a baseball bat. The reason those games were generally side-view was because a silhouette of a human is most recognisable when seen from the side, and you could draw the human large enough to invoke emotional involvement. Now, if we want the character to permanently hold a weapon in a side-view game while maintaining the size of the character, the character will have an enormous reach and will become too strong. It will become too difficult to adjust the game balance, so you would have to draw the character smaller if you want him or her to walk freely with a weapon, and this was another difficulty. For those reasons, most of the games in the genre were fought with bare hands. It was the same with Sega games [including *Altered Beast*]. But, we decided to give weapons to the characters to make the game different from *Double Dragon*. We adjusted the swing so the characters could not attack too far. We had to draw the playable character small, but instead we made the boss enemies and magic effects] huge."

And they were certainly impressive, from Ax's mini mushroom-clouds and Gilius's lightning-bolts to Tyris's ultimate magic attack, a screen-high fire-breathing dragon. Each of the three characters had to collect magic potions to power-up their spell bars by whacking little gnome creatures, either in the main game or a humorous intermission around a campfire. Working out the best time to use spells, either casting lowly, less damaging attacks on smaller minions, or saving up all your potions to unleash a massive firestorm on bosses, added a degree of strategy to the gratuitous hacking and slashing. "I happened to have knowledge of element-based magic, so I simply applied it," says Uchida rather enigmatically. "Although we did not select water because water would be a healing magic, rather than an attacking magic."

Another memorable feature of the game was the addition of rideable beasts. One creature that makes an appearance in *Golden Axe* – the so-called chicken-leg monster or cockatrice – had first cropped up as a monster in *Altered Beast*. In *Golden Axe* it makes its entrance as the steed of a clan of ferocious Amazon women. Later ▶

GOLDEN MOMENT

#3 LAUGHING GIANTS
■ The first pair of bosses in the game are these hammer-wielding giants, who spend a fair bit of time standing and laughing to themselves at your efforts to dispatch their henchmen. Never mind, they won't be giggling in a minute.

DEVELOPER HIGHLIGHTS

ALTERED BEAST (PICTURED)
SYSTEM: ARCADE
YEAR: 1988

ALIEN STORM
SYSTEM: ARCADE
YEAR: 1990

GOLDEN AXE, THE REVENGE OF DEATH ADDER
SYSTEM: ARCADE
YEAR: 1992

GOLDEN MOMENT

#4 TURTLE VILLAGE
■ As one of the game's intermission screens is [illegible]

players encounter two types of dragon which, after dismounting their riders with a swift blow to the head, can be ridden into battle spewing flame or blasting fire bolts at the bad guys. "This idea came from an art asset painted by a senior artist," adds Uchida. "A character was riding on a monster using a saddle. I saw it, and thought we could use this in the game."

Speaking of fantastic beasts, we ask Uchida why the team decided against following *Altered Beast*'s lead of implementing monster or creature guardians, rather than the knights and giants that make up the main bosses of *Golden Axe*. "We had to give up some small details, but basically everything is in the game," he explains. "I'm surprised you noticed this. This was intended. As part of *Golden Axe*'s concept, we decided to design the enemies as close to human. We wanted to stick to the gameplay of 'human versus human'. If there is no unity in gameplay, it will be difficult for the user to learn and advance the play skill."

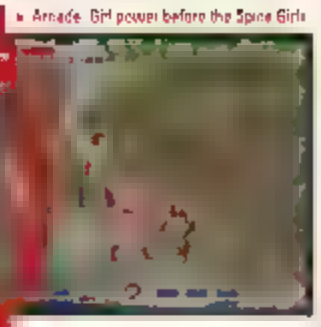
An amusing final surprise is left to the last reel of the game. After Death Adder is vanquished and the credits roll, the game goes all *Blazing Saddles* on us and the cast of *Golden Axe* burst out of their arcade cabinet and go running through the streets of an Eighties metropolis, Benny Hill-style. "Just like my other titles, like *Altered Beast* and *Alien Storm*, I like joyful endings," Uchida tells us. "In *Golden Axe* the characters pop out of the game. This is because I wanted this to happen. When you were a child, I bet you wanted the characters from TV programmes and videogames to come out of the screen, right?"

Uchida also offers us a potted history of how the game ended up being christened *Golden Axe*. "The name of the game changed three times," he reveals. "Originally it was called 'Battle Axe'. The development team members liked it, but we gave it up for licence reasons. The next name was 'Broad Axe'. This was an English word that we thought would match the original Japanese title. There were no licence issues, and so the development moved on. But, right before the end of the development, the president of Sega JS saw Gilius's axe, which was a bit yellow-ish. He thought that colour was gold and he said 'Golden Axe' is the title of the game. We didn't like the name because it had no relations with the Japanese but we were threatened that he would not sell the game if the title name was not 'Golden Axe' and so we changed the title name. Death Adder's axe was coloured gold, instead of the original silver and we also changed the plot to match the name. I now think it was good that we had changed the name and appreciate his advice."

With the arcade game proving a big draw for fans of hack-and-slash fantasy it seems the team was well rewarded after its year-long development project. Like *Altered Beast*, Sega selected *Golden Axe* to be ported to its Mega Drive/Genesis console. The result was, save a few shortened areas, an authentic conversion that added an extra level to the end of the game, and new a final boss called Death Bringer. However it turned out he was really just another version of Death Adder in disguise. "I was an advisor providing advice to the development team," Uchida tells us. "The basic game is the same as the arcade version, and I think the conversion was really good. If I could say something, the Death Bringer could have been better and I wanted to give him a better name. I wanted him to appear in a more dramatic way and I wanted to change how he looks, not just the colour. He is the final boss, and so he should be most impressive." Sega also released a Mega CD port, with improved animation but solo-play only, and a butchered version of the game for the Master System, with Ax Battler as the only playable character. Virgin Interactive was granted the licence to produce ports for the Amiga, Atari ST, C64, Amstrad CPC and Spectrum, which were coded by Probe Software, while Japanese developer Telnet produced the disappointing PC Engine CD version.

GOLDEN MOMENT

#6 BURN, BABY, BURN



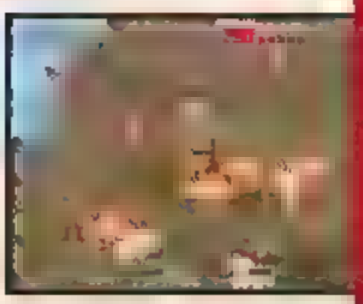
Arcade: Girl power before the Spice Girls

Arcade: Ax unleashes a mini apocalypse on a pink knight

GOLDEN MOMENT

#5 GNOME-WACKING

Arcade: We're surprised Gilius can wield that massive axe

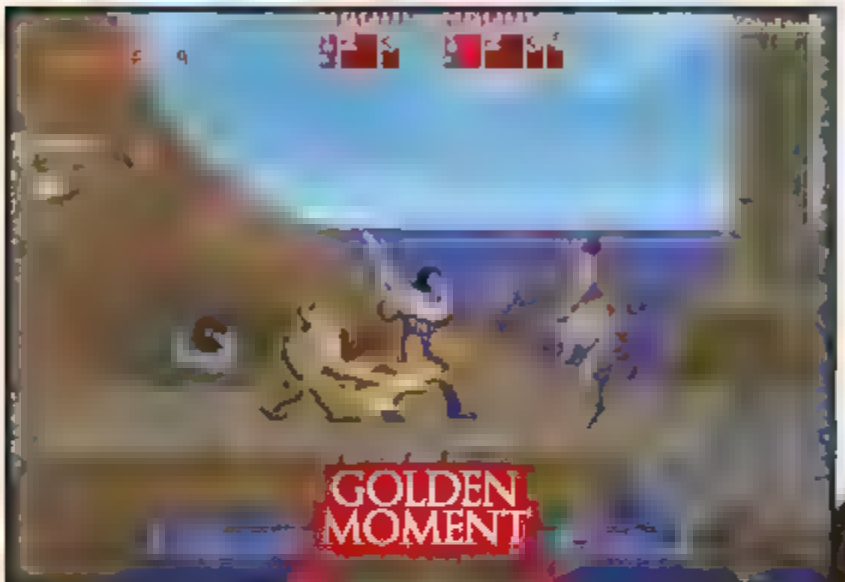


Arcade: Tyris rustles up a fire spell while Gilius does a bit of dwarf skeleton tossing

"WE DECIDED TO GIVE WEAPONS TO THE CHARACTERS TO MAKE THE GAME DIFFERENT FROM DOUBLE DRAGON"

Makoto Uchida

Arcade: Death Adder about to rise from his grave



GOLDEN MOMENT

The popularity of the rather more accomplished Mega Drive cartridge release led to a couple of exclusive sequels on that console, although Uchida wasn't involved in either of them. But he did return with his 'true' arcade sequel, *Golden Axe: The Revenge Of Death Adder*, which included four new playable characters and even more spectacular and sometimes gruesomely over-the-top magic effects. Bigger and more involving than its prequel, many fans would consider this entry as the high point of the series. More recently the franchise suffered from lacklustre sequels like *Golden Axe: The Duel* and the critically banned *Golden Axe: Beast Rider*, released on PS3 and Xbox 360 in 2008. But of all the *Golden Axe* titles, the original incarnation was the game that made the biggest splash in its day and remains most fondly remembered, with versions still selling on a range of modern consoles and portable devices. We ask Uchida why he thinks his famous fantasy brawler has endured so well in the public imagination as it approaches its 25th anniversary. "Probably because it was one of the earliest action games that was based on the fantasy world of swords and magic," he muses. "The visual effects of the magic spells, were pretty neat for a title back then, and probably people remembered it with the surprise of seeing new stuff." And we can't argue thinking back to when we first saw that enormous dragon head hove into view and roast the occupants of the arcade cabinet to charcoal while Tyris strutted her stuff in a medieval bikini. That was something you didn't see every day back then. ★

#7 BEAST RIDERS

Alongside the magic effects, one of *Golden Axe's* signature features is the ability to steal the steeds of adversaries and turn them against them, from the lowly chicken-leg monster to this extremely nasty fireball-spitting beastie.

Arcade: Yes, the post-level intermission screen, your handy guide to the realm of Yuria

GOLDEN AXE: THE SEQUELS

GOLDEN AXE II (1991)

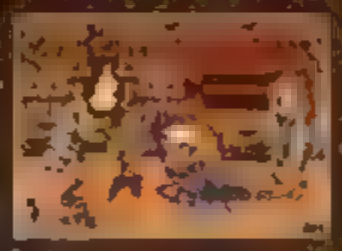
This Mega Drive exclusive doesn't differ much from the original, with our three heroes returning to defeat a new archenemy called Dark Guld. The move set has been tweaked, for instance Tyris now has a back-flip attack, and the magic effects are a little weaker looking, but some of the music, from *NiGHTS Into Dreams* composer Naofumi Hataya, is most impressive.

GOLDEN AXE WARRIOR (1991)

Released for the Master System, perhaps to make up for its woeful conversion of the arcade game, this was actually an action-RPG, and a rather shameless clone of Nintendo's *Zelda*. Tasking players with finding nine magic crystals hidden by Death Adder in the oddly-named kingdom of Firewood, it was a fun quest, and one of the last releases for Sega's 8-bit console.

AX BATTLER: A LEGEND OF GOLDEN AXE (1992)

Sega's Game Gear also got its own *Golden Axe* spin-off that respectfully ripped off another *Zelda* title, *Link's Adventure*. It's an action-RPG with a top-down overworld for exploring, which switches to the more familiar side-view of Ax when he's, ahem, battling.



GOLDEN AXE: THE REVENGE OF DEATH ADDER (1992)

The only other *Golden Axe* title involving Makoto Uchida, this arcade sequel ran on Sega's powerful System 32 board. Featuring four new characters, including a female centaur and a giant, it's definitely one of the top Nineties scrolling beat-'em-ups.

GOLDEN AXE III (1993)

This Japan-only Mega Drive sequel may have been influenced by *Revenge Of Death Adder*, with its larger characters and multiple routes. There are some nice set pieces like a fight on a wagon, and another decent Hataya soundtrack, but it feels more like *Streets Of Rage* than *Golden Axe*. Not that that's a bad thing.

GOLDEN AXE: THE DUEL (1993)

The third and final *Golden Axe* arcade title departed from the scrolling beat-'em-up formula, instead taking the form of a *Street Fighter II*-style one-on-one fighting game. Utilising Sega's STV board, based on its Saturn console hardware, the main draw of the game was getting the chance to play as Death Adder himself.

GOLDEN AXE: BEAST RIDER (1998)

A bloody re-imagining of the franchise, *Beast Rider* is a 3D hack-and-slash with little in common with its predecessors, save for the appearance of an unrecognisable Tyris Flare as its beast-riding heroine. Riding giant beasts is enjoyable, but combat is awkward, as is the finicky camera system.

GOLDEN MOMENT

#8

HYDRA'S TEETH?

In a nod to Ray Harryhausen, our heroes encounter an army of skeletons on the back of a giant beagle. Given arcade technology, we'd have to say they are not as well animated as the ones in *Jason And The Argonauts*.

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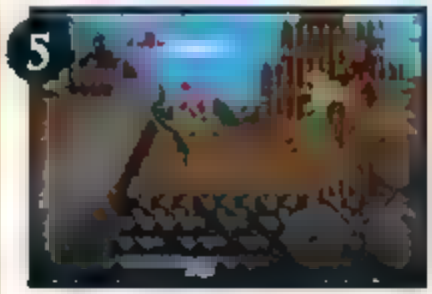

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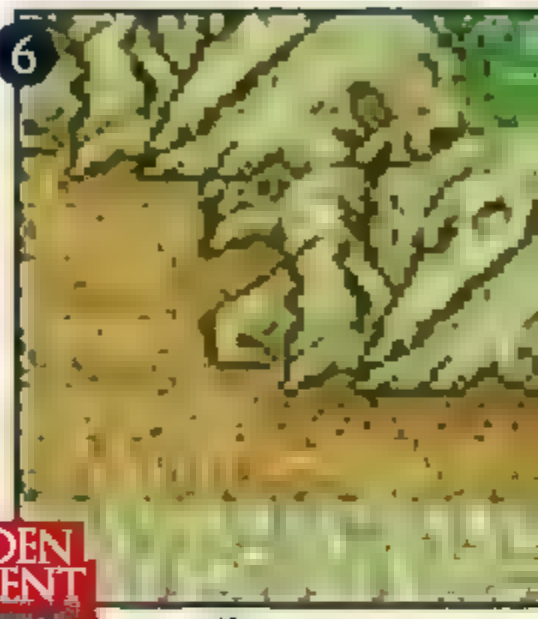

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GOLDEN MOMENT

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#9

MEET DEATH ADDER

The final showdown with Death Adder is worthy of any Conan film. After regenerating from a pile of carcasses, he attacks you with scary energy blasts and a very big axe, which ultimately proves his undoing.

8

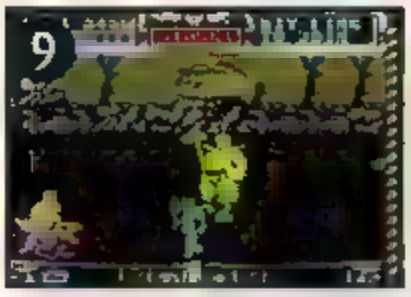
MASTERING THE AXE

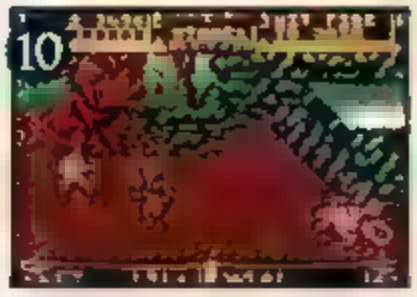
The best and worst conversions of Sega's classic brawler

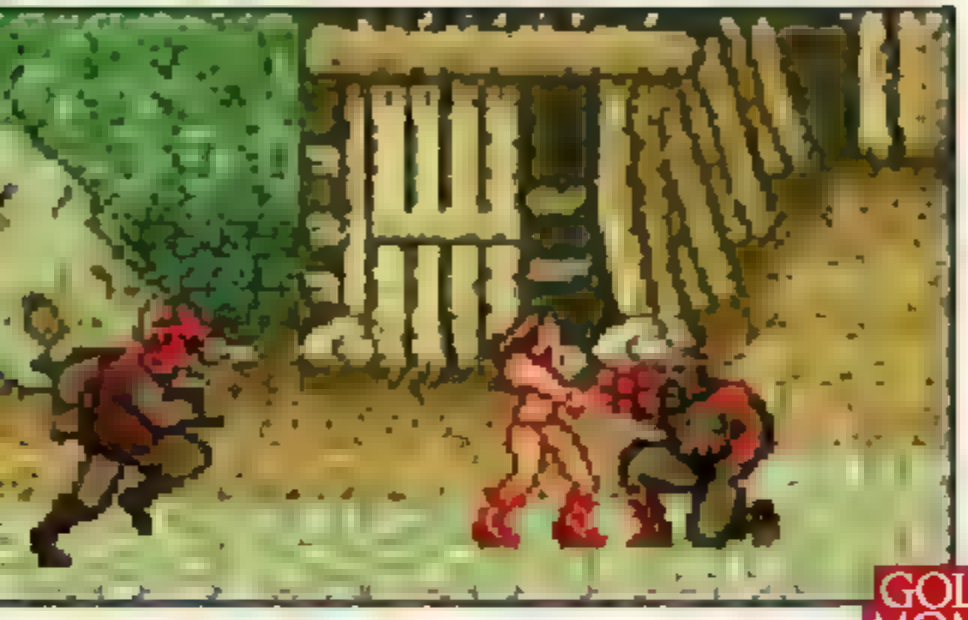
Sega's own Mega Drive (1) port is extremely close to the original game, featuring slightly smaller sprites and weaker audio. Approved by Uchida himself, it adds extras including 'Duel' and 'Beginner' modes and a bonus new level featuring Death Bringer, Death Adder's purple-skinned boss. It's arguably the best early version available. By comparison, the Master System (2) effort is atrocious. Tyris Flare and Gilius are missing (although their magic remains) the graphics and animation are terrible, while the multiplayer is absent.

The Mega CD (3) also misses the multiplayer mode, but does include better animation and great Red Book audio. The GBA outing (4) on the *Sega Smash Pack* is very poor. The playing area feels cramped, the collision detection is appalling, and it has atrocious audio and missing music. The *Dreamcast Smash Pack* port is another disappointing Mega Drive conversion with similarly poor audio. The Mega Drive outing continued to form the basis for many later compilation console ports, including the PC, PS2, PSP, PS3 and Xbox 360. It's also the basis for Lavastorm's reasonable Tapwave Zodiac port and the iOS (5) version, which is an otherwise authentic release hampered by fiddly controls. A far better handheld effort is on the WonderSwan Color (6). It features improved visuals, new combat animations and a decent soundtrack, a much better alternative to Tiger's bland LCD effort. The worst console effort is Telenet's PC Engine CD (7) port, which suffers from terrible animation, clunky controls, naff remixed tunes and laughable animated cut-scenes.

The 8-bit home computer ports are all by Probe and quite mixed. The C64 (8),







"Death Adder's axe was gold and we also changed the plot to match the name"

Makoto Uchida

GOLDEN MOMENT

#10 BLAZING DRAGONS

On beating *Golden Axe*, players are greeted with one of the funniest end-credit sequences ever to grace a coin-op, as the various villains you've fought burst out of the cabinet and run out of the arcade with our heroes in hot pursuit

offers incredible music, muddy visuals, poor controls, no multiplayer and there's only ever one enemy on-screen. The Amstrad and Spectrum versions fare better. The Spectrum **(9)** iteration is very decent, with far better hit detection and the all-important two-player mode. The graphics look weedy and garish, but it remains solid. The Amstrad **(10)** one is even better with far more detailed visuals and the same two-player mode.

Things were far better on the 16-bit formats, with Probe once again on the coding duties. The Amiga **(11)** version is brilliant with visuals that are arguably better than the Mega Drive game. The animation and scrolling is super slick, while the tunes sound a lot punchier than Sega's effort. It misses out on the control front, but this is otherwise very, very good and virtually identical to the Atari ST outing. Interestingly, the PC **(12)** port seems to be based on the Mega Drive game, as it features the same 'Beginning' and 'Duel' modes, and the Death Bringer colour palette, but not the final level. Sadly, it has terribly jerky scrolling and poor audio.

The best current version can be found on the Xbox 360 **(13)** and PlayStation 3; they're both very accurate arcade ports and also feature online play. The Arcade version and Mega Drive outings are also available on the Wii's Virtual Console but without online support. *Golden Axe* can even be found on mobiles, but it suffers from cramped controls and weedy looking visuals. Perhaps the biggest atrocity though was Sega's attempt to remake the game for PS2 **(14)**. It should have been an incredibly accurate arcade port but was a botched 3D reimagining with laughable visuals and excruciatingly painful gameplay.

UFO
ENEMY UNKNOWN

20 years after its initial release, UFO: Enemy Unknown remains one of the most challenging and influential strategy games ever to be released. We spoke to lead designer Julian Gollop to try to get to know this enemy better

You really shouldn't have taken that 48 per cent shot. At the core of *UFO: Enemy Unknown* are myriad interlocking systems, with the input on one affecting the output of many others. One single bad turn on a mission, one single hasty click, just one mistake and before you know it you're wondering whether you're a bigger threat to humanity's chances than the aliens.

If you lose a few too many soldiers on a mission, then you might need to withdraw from it completely, hoping that your squad can last out long enough to make it to the evac point. Lose everybody and your Skyranger ship goes too. A replacement ship, which you absolutely need, costs $500,000 – and you'd much rather spend that money on some more scientists, essential for the research required to fully defeat the alien menace.

So you flee, losing a further soldier in the process. Astra Belov, let's call her – someone you've grown a particular attachment to, after you managed to save her alone from the massacre that was the first mission. This was her fourth mission – and she'd made Sergeant after two. Unlike the rest of your squad, you actually remember her name. You thought you were looking out for her. But she's gone. And your remaining squad escapes. With aliens left unchecked to terrorise Leipzig, the German government looks like it's about to pull your funding. You really shouldn't have taken that 48 per cent shot.

UFO: Enemy Unknown is cerebral, not muscular – reflexes are unimportant, but an understanding of how to play within the systems is. "Well, I was playing lots of board games and card games as a child," says Julian Gollop, lead designer of *UFO: Enemy Unknown*. "I played chess, of course, then progressed onto other board games and board war games from companies like SPI and Avalon Hill. Around age 11 or 12, I was making board games as well. When home computers came along, round about when I was 18 years old, I think I got my ZX81 then. I saw home computers as a medium, a platform for making the kind of games that I was interested in.

"This is kind of what I wanted to explore, what computers could do that board games couldn't – with computer games, particularly on the tactical combat side, we could have the idea of line of sight. Your soldiers

» [PC] Dealing with the alien threat naturally leads to some casualties.

» [PC] Managing the individual inventory of each soldier can be a pain.

IN THE KNOW

» **PUBLISHER:** MICROPROSE

» **DEVELOPER:** JULIAN & NICK GOLLOPY MYTHOS GAMES

» **RELEASED:** 1994

» **PLATFORM:** PC, AMIGA, CD32, PLAYSTATION

» **GENRE:** STRATEGY

» [PC] Don't let your scientists and engineers twiddle their thumbs – get them cracking on some weaponry.

▶ [PC] The intro is completely awesome, drawn like a Nineties comic book.

could only see what they could see. The map was revealed through what they could see, and they could only see enemies if there were no intervening obstacles. "I did try to implement something like that in a board game before computers came along. It was quite cumbersome."

At first, *Enemy Unknown* started out as a sequel to *Laser Squad*. "We had a demo of something that we called *Laser Squad 2*, which was on the Atari ST," explains Julian. "It had some elements of what went into *UFO*. It had the 3D isometric graphics, where bullets could go up and down as well as left or right, so it had this sense of a real 3D world to it. It had destructible terrain, other stuff that was in *Laser Squad*, but the main innovation was the 3D isometric perspective."

With the rough demo in hand, Julian and Nick (his brother) now had to find a publisher. Right at the top of their list was Microprose – considered by the Gollop twins to be the best publisher in the business. Microprose was interested, and gave them an 18-month contract to produce a game, paying £3,000 per month between them. With Microprose on board, now the proof of concept had to be made into an actual game.

"Their biggest influence was right at the beginning. Actually, their only influence was right at the beginning, as within a few weeks of discussing it with them I had a fairly clear idea of how the game was going to work. Basically, their idea was to expand the game into something with more of a strategy element to it," continues Julian, on Microprose's early input. "What they basically wanted was something that could somehow match *Civilization* in terms of scope and ambition. A grand strategy game. Of course, what I had was a tactical two-player game. They wanted some kind of research tree, and something like the Civilopedia. What they were suggesting was very high level, with no details about how on earth it was going to be implemented."

As with much of the project, the Gollops were mostly left to get on with it. When Julian produced his first design document, Microprose didn't really understand it. "I had to go to this meeting in Chipping Sodbury to explain in person how the game worked. Of course, I didn't have any other game to compare it to, because there wasn't any other

> **"I had to go to this meeting to explain in person how the game worked"**

DEVELOPER HIGHLIGHTS

LASER SQUAD
SYSTEM: VARIOUS
YEAR: 1988

RAIDERS
SYSTEM: ZX SPECTRUM
YEAR: 1984

LORDS OF CHAOS
(PICTURED)
SYSTEM: VARIOUS
YEAR: 1990

game like it. It was a bit new to them... and, okay, in reality it wasn't really like *Civilization*."

Microprose did, however, have a hand in the theme and setting of the game. It felt that, following on from the success of *Civilization*, players would relate well to a game set on Earth. The first idea for the theme of *UFO* came from Peter Moreland, deputy publisher for Microprose. A fan of Gerry Anderson's TV series *UFO*, he suggested it as an idea to base the theme and setting of the game.

Julian watched a few episodes on VHS, and wasn't too impressed with it as a basis. "The only idea that was retained from that was the idea that you had this all-encompassing, worldwide organisation, that's responsible for somehow intercepting UFOs before they could do any damage. So, SHADO became XCOM... I found an alternative inspiration to Gerry Anderson's *UFO*, in a book called *Alien Liaison* by Timothy Good, which had this stuff about Area 51 and capturing and reverse-engineering UFOs. So, this idea of capturing the UFOs and their contents, and then researching it, reverse-engineering it, and then building your own new tech comes from that idea."

The complexity of *Enemy Unknown* is one of the main reasons it is still so revered, yet each of the systems is actually pretty simple

ARMCHAIR GENERALS

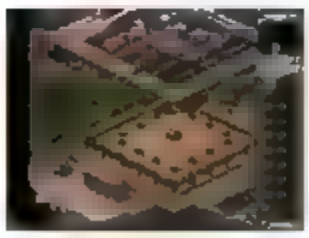
The five big guns in the world of real-time strategy

TOTAL WAR SERIES

■ Probably the biggest strategy titles around today, the *Total War* series is a must-play for any strategy fan – or indeed, anybody who fancies looking after 10,000 men. There's all sorts of mods too, for example the *Lord Of The Rings* mod for *Medieval II* that includes a recreation of Helms Deep.

COMPANY OF HEROES

■ This World War II RTS series is one of the most acclaimed of recent years, and shows off modern computers pretty well while being a challenging strategy game. The WW2 setting means that you get to recreate some historical battles, such as Operation Market Garden. Because that one went so well.



COMMAND & CONQUER

■ This classic series is one of the true greats. The *Red Alert* spin-off series is probably the most popular amongst fans. Even those who don't love strategy can find something to love here – probably the music. Whack *Hell March* on, and change history for the motherland.

DUNGEON KEEPER

■ Take control of your own dungeon, build a nice little torture chamber and slap your own minions around a bit. It's Peter Molyneux thinking his mad thoughts again, but this is one of the times he came up with an idea that really worked. A very silly game, but one that's well worth playing.

CIVILIZATION

■ By today's standards, *Sid Meier's Civilization* may seem clunky and obtuse. However, we should show it some respect. This certainly wasn't the first strategy game, but it remains a milestone of the genre. If the challenging UI doesn't bother you, perhaps you already play games by Paradox.

THE NUMBERS GAME

Why maths is quite helpful when playing UFO

Although it can be daunting, you really need to get to grips with the game systems in order to be able to actually do anything in *UFO*. This means having a head for figures. How many time units will you have to spend to get line of sight on that enemy? Will you actually have enough remaining to fire? Is it even worth fighting this mission? Your rookies are little better than useless at early levels, which makes it all the more heartbreaking when the one tough bugger who's been fortunate enough to stay alive gets wiped by an enemy lurking in the dark.

Furthermore, there's the routine maintenance of your base – keeping sure that you've got enough in your stores to replace lost equipment, making sure each soldier is equipped, right down to the precise amount of ammunition they carry, making sure that your resources all go to good use... there's an almost overwhelming amount of data to deal with. We asked Julian for tips, as most of the planet was threatening to abandon us. He could only say "Oh dear. You certainly need to get your research up and running pretty quickly. I guess I can't really help you anymore, I'm probably a bit crap at playing it myself!"

▸ [PC] A full squad, but how many of them will get back in one piece?

Below gets shot, she dies. Aliens attack. Germany, Germany panics. You lose money and therefore now have even less to spend on protecting what's left of the world. The next mission is even harder, and yet you still need to capture some alien technology to research. The complexities, and the fun, arise from the interactions between these individual systems, and from the unforeseen consequences.

"There's a lot of systemic stuff," admits Julian. "Although this is not revealed to the player, the aliens have certain levels of progress in their plan. Each region of the world has its own level. So, first level, they'd be sending out scouts, next level they'd be sending out abductors. Basically, the aliens had to fly a certain amount of missions in order to progress to the next level. Of course, you could stop them progressing by shooting down their ships. All the player can see is that they are encountering new alien ships, and new alien enemies. Eventually

▸ [PC] End-of-month reports show you how badly you're doing.

▸ [PC] Even at point blank range, your rookies can't shoot straight.

the aliens get to a level where they send out ships to look for your bases, which can be very dangerous if your base gets attacked, of course. They will infiltrate the governments, and basically take over them. The alien's plan was inexorable – you could slow it down, but the only way you could ultimately stop it was to build your technology, go to Mars and destroy their big brain."

Despite the size of the game, and the fact that it was nearly three years in gestation, only Julian and Nick actually worked on it as designers and programmers, with two artists at Microprose. "It was a bit ridiculous – we should have basically hired more programmers, but of course Microprose weren't giving us any money to do that."

Furthermore, unbeknownst to Julian and Nick, the game was actually cancelled when Microprose was bought by Spectrum Holobyte. Pete Moreland decided to keep the project running anyway. "I guess it was just such a tiny cost to them. And then, only when Spectrum Holobyte were desperate for some product to ship within the financial quarter, did they ask Microprose UK, 'What have you got coming up that we can ship by the end of March?' The Microprose UK guys said: 'Wait, you know that game you asked us to cancel – we've still got it.' Suddenly our project became a high priority, right at the end, and myself and Nick were under a lot of pressure to actually get it finished before the end of March 1994."

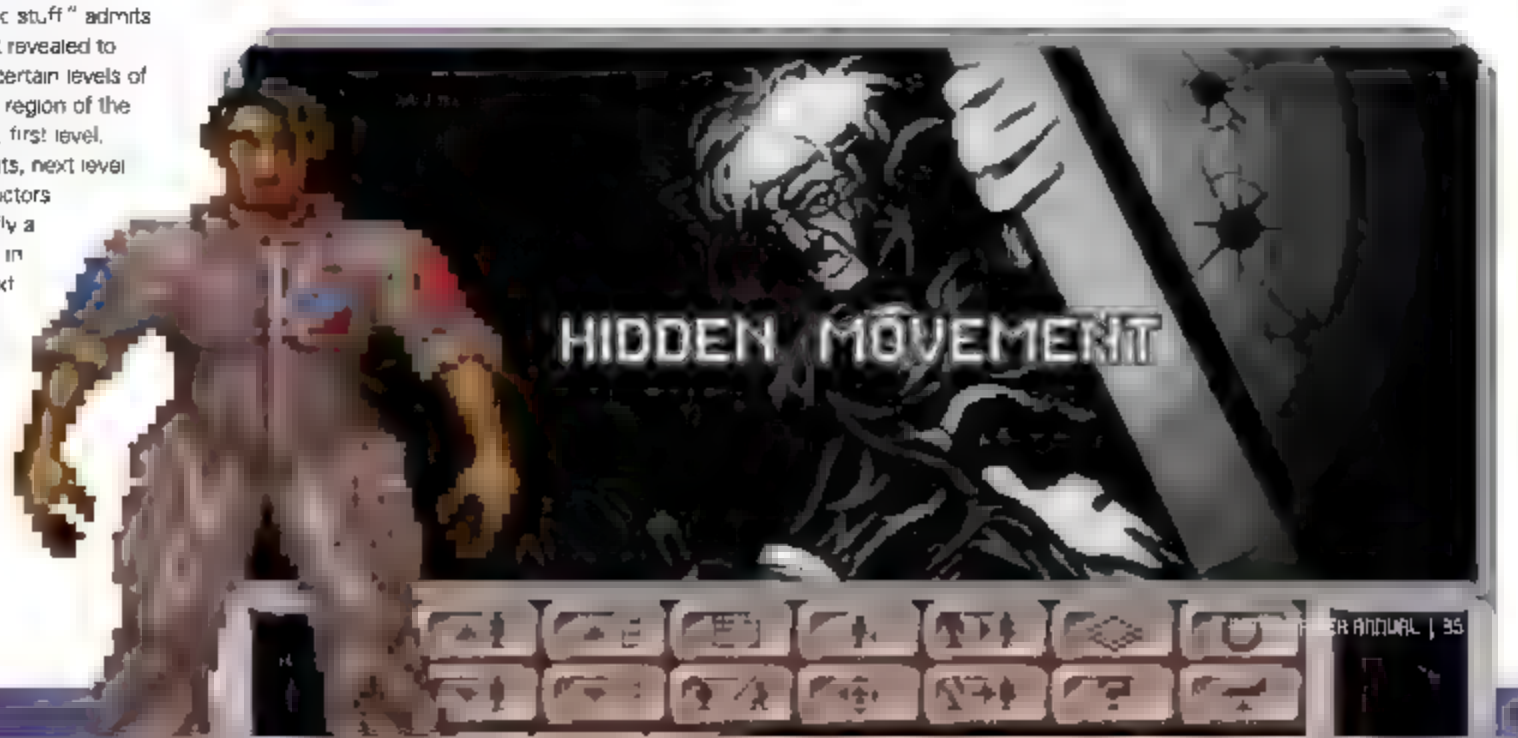
This period of crunch was, Julian admits, right by today's "abusive" standards. However, it was a stressful time, made no easier by Microprose's penny pinching. "We practically had computer meltdowns, my computer was on its last legs. The fan kept stopping. We had to beg Microprose for a computer for Nick – they had to give him a reasonably powerful computer for doing the debugging in the final stages – which they did agree to, sort of. Initially, they said we had to bring our own equipment!"

In the crunch period they went to work in a closet at Chipping Sodbury for over two months. "We were there seven days a week, ten hours a day, working on the game, and yeah, we had to bring our own equipment," continues Julian. "They had a big virus attack, and accused us of bringing a virus. It turned out not to be us, but one of the other Microprose guys! We weren't exactly treated extremely welcomingly, I must admit."

While Julian didn't work on the sequel, *Terror From The Deep* (which was made, he says, by about 15 people in twice the time the Gollops were offered to make it), he did go on to make further titles in the *XCOM/UFO* series. Would he attempt to make anything as complex again?

"I've always liked strategy games, because I believe that a good game may have relatively simple rules but have complex situations arising from them. Strategy games tend to do that very well, you know – even the simplest ones are very good at that. I think it's possible to have an accessible game which doesn't have amazingly complex rules, but still has a lot of emerging complexity within what happens – you know, what players do, what players explore. For me, that's the holy grail of game design. So, I don't think I would probably go back to making games as complex as *UFO*, but I think there's still a lot of stuff you can do, even with simple rules."

▸ [PC] The most worrying screen in the game, and possibly any game. The tension... the screams...



The Chaos Engine was one of The Bitmap Brothers' defining games, showing the company at the height of its powers. We quizzed co-founder Mike Montgomery on how it all happened

» PC: *The Chaos Engine* was recently released on Steam

» PC: If you squint, it looks a little like *Speedball 2*.

IN THE KNOW

- **PUBLISHER:** RENEGADE SOFTWARE
- **DEVELOPER:** THE BITMAP BROTHERS
- **RELEASED:** 1993
- **PLATFORM:** VARIOUS
- **GENRE:** TOP-DOWN SHOOTER

» [Amiga] Special attacks can be awesome if you fire them correctly

The phrase 'hardcore' is often used when describing classic Japanese games, as if Japanese tastes truly were only geared towards the more extreme end of the difficulty spectrum. Truthfully, however, while several Japanese games and franchises end up notorious for their high level of difficulty, such as *Dark Souls* and *Ninja Gaiden*, they're only a small part of the range of Japanese games that these days often cater for a broad audience. Similarly, easier games are also popular with Transatlantic gamers. While accessibility in gaming has brought videogames to many who might not have picked up the hobby, one could argue that such moves have come at the expense of challenge.

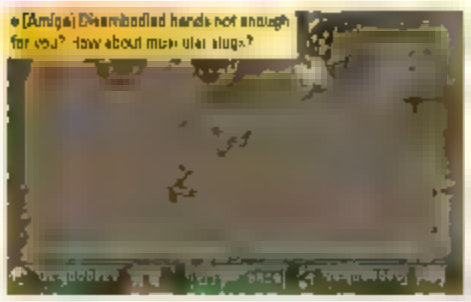
Fans of the *Metal Gear Solid* series will be aware of the 'European Extreme' difficulty setting, made to satiate our specific desire for punishment. At a cursory look, Europeans do seem to be a little more masochistic than the rest of the world when it comes to games, with perhaps the exception of Russia, home of the infamous *Pathologic* from Ice-Pick Lodge. But historically, Britain in particular has given the world more than its fair share of hard-as-nails gaming gauntlets. *Elite* was made in the UK. *The Sentinel*. *Discworld*. And *The Chaos Engine* in particular is representative of this kind of British Hardcore gaming, with a capital B for 'Bugger me!'

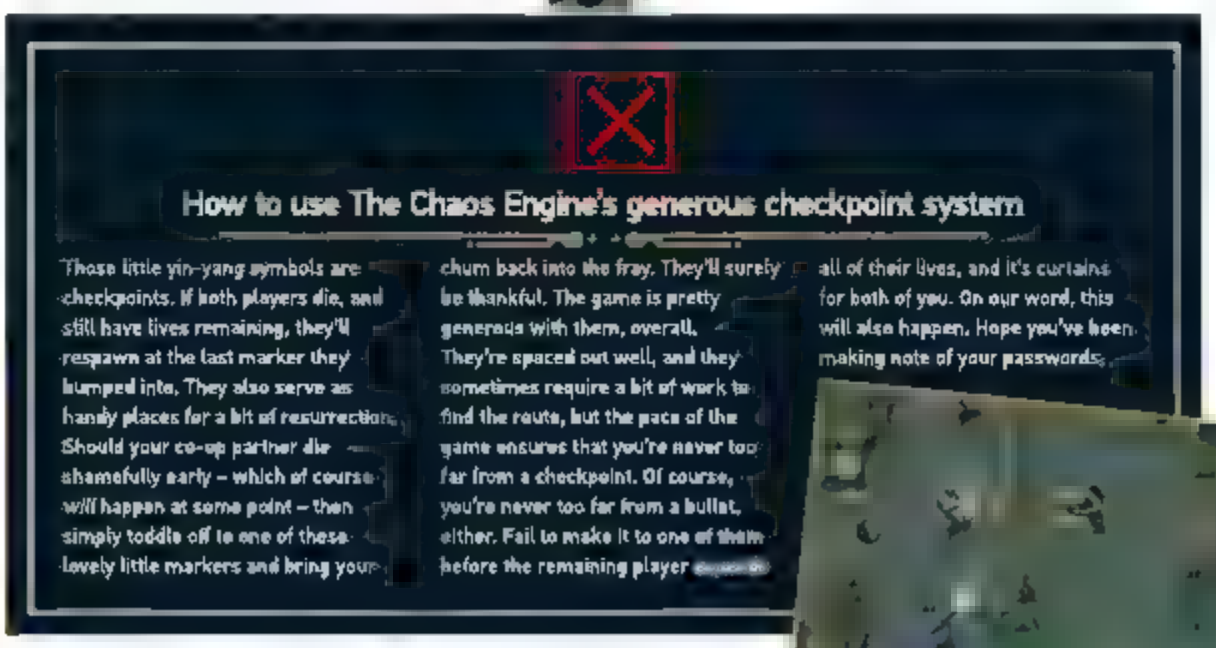
"In some places we had to change the gameplay, it was too hard!" Mike Montgomery, founding member and owner of The Bitmap Brothers, shoots from the hip, telling us that there was always little point in making an easy game. "I think it's like all of the Bitmap Brothers games... they're probably a bit too difficult," he admits. "The reason for that was we designed games that we wanted to play... for us it was actually quite hard to think that somebody would want to play something that's easy.

"In some places we had to change the gameplay, it was too hard!"

With a twist of British humour, that difficulty level would be even tougher if you'd come by your copy via dubious means... "The other problem with Bitmap Brothers games and hardiness is that, as copy protection goes, if you had a pirate copy, the game was probably about 30 times harder," continues Mike. "We used to get people phone up and say 'Why, er, why did you make the game so hard?' and we'd say 'Well, what do you find hard?' and then they'd tell us, and we'd say 'You must have something wrong with your copy, send us your address and we'll send you a new copy.' Of course, they'd put the phone down then. We never expected people to persevere that much."

Choosing one of six characters (Navvie, Thug, Brigand, Preacher, Mercenary, and Gentleman), each with differing stats and abilities, players of *The Chaos Engine* must navigate an extremely hostile, mutated version of Victorian Britain. Nodes of the titular Engine, scattered all across the landscape and surrounded by strange creatures, must be activated in order to change the layout of the world and eventually enable you to destroy the Engine itself. *The Chaos Engine* is a top-down shooter with an extremely strong steampunk aesthetic, made long before the internet made it so popular.


» [Amiga] Disembodied hands not enough for you? How about mutant slugs?



» [Amiga] You can enhance your characters with the money you pick up

▶ "We've actually done a bit of research on the internet today to find out, to remember!" explains Mike when we ask him about the game's distinctive style and plot. "To be totally fair, I remembered it exactly. I just missed one person's name who actually was involved. I cannot find his name, because sadly he left the company before the game was finished. His name was Phil. He's not in this industry, he left to do something completely different. He was reading *The Difference Engine*. To be perfectly fair, I don't know the novel, I actually never read it myself. I'm dyslexic, so I don't read a lot. He was reading the book at the time and kinda said 'Why don't we make a game based on this?' It's one of those things, you know, when somebody comes up to you and you go 'Go away, it's a load of rubbish' and then it sort of sticks in your mind. The more he talked about it in the office, the more it was like, 'This is a really, really good idea.'

"Well, that's where the plot came from, anyway, let's put it that way. That's where it really ended up, it's, you know, steampunk. I don't know what to call it really, apart from steampunk! And it was cartoony, but realistic, you know what I mean? It was really exciting. Where did the story come from? Well, that was actually built up as it went along, and there's probably not much of a story in there!"

Surprisingly, for what is, by British standards, a relatively benign setting, story, and characters, opening up the game to the wider international market caused some problems. For a start, the name *The Chaos Engine* had to go – the game being renamed to *Soldiers Of Fortune* in America. The box artwork was also changed, losing the steampunk look. Also, there was an unexpected problem with one of the characters. "We couldn't use the priest in America," Mike tells us sadly.

Yes, unfortunately for the studio, what may well have passed unnoticed in Britain – Mary Whitehouse being more interested at the time in protecting the world from RPGs, which is why, as we all know, those of us in the UK missed out on some *Final Fantasy* titles – may well have caused quite a storm in the far more religious US.

"You've also got to remember that the publishers in America were from the Bible belt. So, that's why the priest couldn't be used," continues Mike about the character's new name change. "They're obviously influenced by their own upbringing, aren't they? They thought that using a priest that was killing things was not the thing to promote in America! That's why it was changed to the Scientist. I can remember at the time that

DEVELOPER HIGHLIGHTS

XENON
SYSTEM: VARIOUS
YEAR: 988

SPEEDBALL 2: BRUTAL DELUXE
(PICTURED)
SYSTEM: VARIOUS
YEAR: 99[illegible]

Z
SYSTEM: VARIOUS
YEAR: 996

Using a priest that was killing things was not the thing to promote in America!

» [Amiga] Er... No idea how to get at them right now. Just keep firing.

» [PC] Try and max stats for best results

» [Amiga] Unlock all the nodes and escape the level

when we got told that we can't use the priest, it was like, 'What the f***'s going on? Tell them to piss off.' And then it sort of dawned on us that to get it into America, we're gonna have to do this, there really is no choice."

Aside from the main aesthetic and plot influence from William Gibson and Bruce Sterling's *The Difference Engine*, players will also note that the third world in the game, the mansion of the antagonist Baron Fortesque, is a little... *Addams Family*-esque.

"Ooh, blimey, did we do that on purpose? I don't really know!" admits Mike, before telling us, "You're dead right, it's got *The Addams Family* written all over it! I think it's something like, whatever is going in your life is always gonna influence something. You know what, I think it was probably the guy that left who worked on that level. I think that was the second level we did. Even though it's not the second in the game, it was the second level that we actually knocked up."

So considering the game was getting 'knocked up', how long did it take to actually create? "Awwww, I can't remember that one! I'll take a guess, it probably took 9 to 12 months. When we started it, there was Dan Malone who was doing the graphics, this guy Phil that was doing the design and Steve Cargill was doing the geometry and the programming on it. And then Phil decided that he didn't want to be in games – I think he wanted to be an author or something like that. It was very sad when he left, but there was no changing his mind. So then we got Simon Knight who actually finished some of the design off."

While *The Chaos Engine* is hard – extremely hard, notoriously hard – the Bitmap Brothers can't be reasonably accused of not trying to make it fair. "We used to spend hours and hours and hours play-testing it," confirms Mike. "We put an awful lot of play-testing into our games, and it wasn't a case of just writing games for money, we were doing it for own enjoyment."

Key to the game is the slick cooperative element, a strong factor in why it became so popular. Regardless of whether played by a solo player or with a friend, Player One will always have a partner. Characters level up based on their individual performance in a game – bonuses being awarded based on how much of the level was completed by a player, how much gold the player picked up, and so on – but this really is still a game based more on cooperation than conflict. Stealing

▸ [Amiga] Like *Saving Private Ryan*. With mutants.

▸ [Amiga] There are often several layers to the top-down levels.

While fiendishly difficult and certainly a product of its time – games now being of the sort where you won't see the end screen because you just haven't got the time rather than the Bitmap Brothers approach of not letting you see it because you just aren't good enough – *The Chaos Engine* is still every bit as good as it was back in the day. Fans with fond memories will be glad to hear that the recent PC re-release is essentially the original code, graphics, and music, running through an emulation wrapper – which means that it's pretty much functionally identical to the original, and every damn bit as frustrating.

too much from your partner and leaving them under-levelled in a two-player game may well leave your unfortunate friend running frantically away from later enemies while firing a peashooter, ultimately making things harder for the pair of you.

"We liked to do multiplayer games, you know, co-operative games – mainly two-player – because that's all we could really do at the time," explains Mike about the cool addition to the gameplay.

Curiously, the AI in the game is actually based on interpretations of how real players play. "When we would play two-player, the coder would watch how the players worked – he wrote the code for the AI around watching people, rather than thinking about how he would play it without playing it.

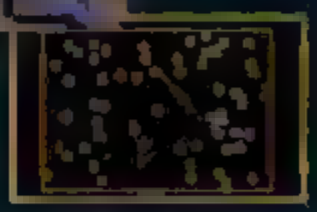
"I think that's what makes it good, you know, because it's a really good way of actually thinking about how to do AI – you actually watch and you play it yourself, and you try to mimic that, rather than just invent an AI with 'intelligence' – but it's not real intelligence in some respects."

Novel solutions like this are one of the reasons that The Bitmap Brothers was able to make so many games for so many different machines using quite small teams – relying on the talent and skill of its developers, rather than on a massive number of workers. *The Chaos Engine* alone was released on a large number of machines – the Amiga, the Atari ST, Amiga CD32 (with a nifty Cosgrove Hall-style animated intro), MS-DOS, Mega Drive, SNES and even RISC OS Acorn Archimedes.

"It was difficult because we were an ST and Amiga company," says Mike. "But by the time we got onto *The Chaos Engine*, most of our games had been on other formats, so we did actually think when we started that we should be gearing it a little more towards consoles as well. One thing that Bitmap Brothers was famous for was that we got the best out of all the machines that we worked on, the ST and the Amiga. I did the low level coding on *The Chaos Engine*, I did all the graphics stuff and the hardware stuff. And that's what I used to do constantly: just tweak, tweak, tweak, all the time, make it faster and faster.

▸ [Amiga] The original Amiga version of the game had blurrier, washed out colours.

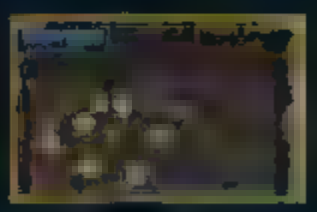
Like running and gunning? Make sure you play these...



ROBOTRON 2084

RELEASED: 1982

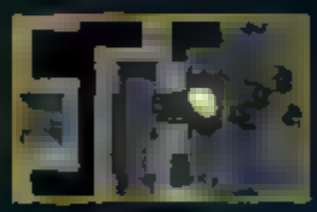
■ This game by Eugene Jarvis, creator of *Defender*, is for many gamers the standard-setter for all top-down shooters that followed after. Taking the rough gameplay idea of *Berzerk* and fitting it with twin-stick controls, this innovation meant that the player could now move and shoot in differing directions simultaneously.



SMASH TV

RELEASED: 1990

■ Another Eugene Jarvis game, and another twin-stick shooter, this game puts players into a murderous game show strongly resembling *The Running Man*. *Smash TV* is flashier and way more ostentatious than its predecessor. Never before has mass slaughter been rewarded by a brand new toaster. Big money, big prizes...



ALIEN BREED

RELEASED: 1991

■ Released in 1991 by Team 17, and heavily influenced by the film *Aliens*, this is a slightly slower paced game than many other top-down shooters, replacing a small amount of speed with a good deal of atmosphere and tension. *Alien Breed* was so popular that sequels just kept getting made, the most recent in 2010.

SHADOWGROUNDS: SURVIVOR

RELEASED: 2007

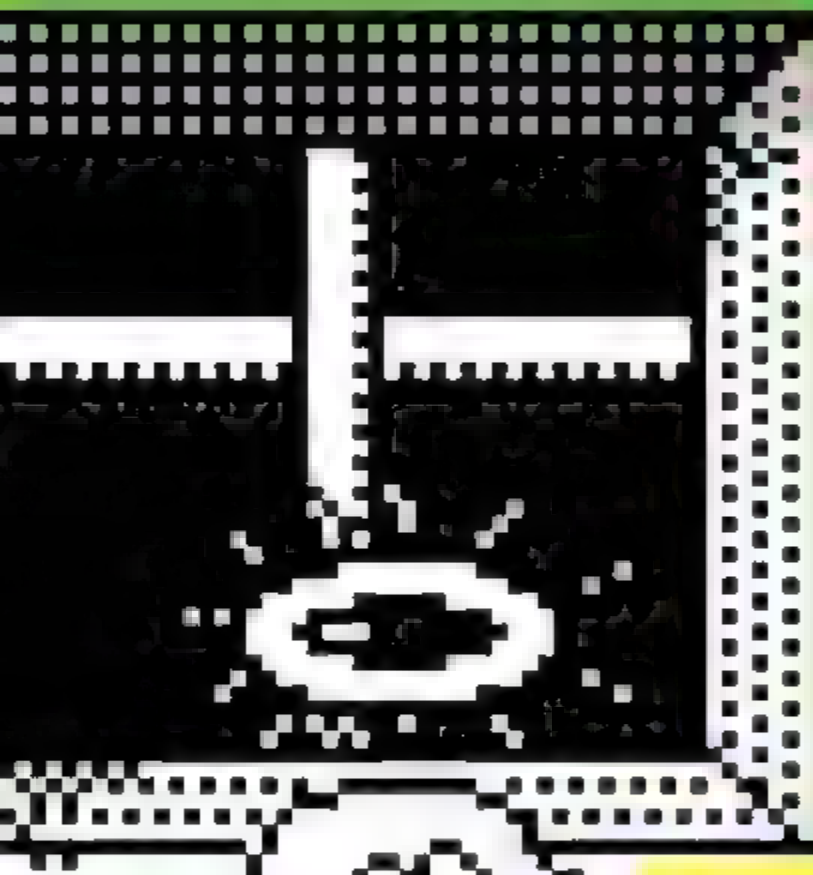
■ This modern top-down shooter from small Finnish developer Frozenbyte is more narrative focused than many other games, flicking between characters as levels and the story progress. While a little rough around the edges, *Shadowgrounds: Survivor* is tight and focused, and cheap as chips.

ALIEN SWARM

RELEASED: 2010

■ Originally created as a mod for *Unreal Tournament 2004*, and then bought out and developed by Valve, this online multiplayer co-op shooter is at the same time modern and old-school, mixing an old game style with current online features, and resulting in one of the most awesome teamplay experiences available. And it doesn't cost a thing!

JACK THE NIPPER



IN THE KNOW

- **PUBLISHER:** GREMLIN GRAPHICS
- **DEVELOPER:** GREMLIN GRAPHICS
- **RELEASED:** 1986
- **PLATFORM:** ZX SPECTRUM, C64, AMSTRAD CPC, MSX
- **GENRE:** PLATFORM PUZZLER

During the early Eighties, Britain's popular press sold the idea that brainy school kids all over the country were being paid a small fortune to create computer games. The most successful ones even drove flash sports cars – or so the stories went. And while there was a certain amount of truth to the phenomenon that the tabloids were reporting on, some developers of the time simply didn't fit their narrative.

"I was 26 when it was published, and all the other people around me were these whizz kids just out of school," says Greg Holmes of his breakthrough title *Jack The Nipper*. But the story of Greg's naughty toddler starts some five years earlier and in a venue far from any classroom. "I was working nights in a large shipyard," Greg begins. "I bought a Spectrum in 1981 and studied computing during my breaks and during any free time. You have to remember that I was far away from civilisation in Barrow in Furness, there were three or four books on Spectrum assembler and Programming the Z80 by Rodney Zaks – which cost £40 then – and that was it. I left the shipyard in 1984 and sold my car and everything that was surplus to requirements – cameras, etc. I then sat in my bedroom and coded and coded ten hours a day for 18 months. I learned 6502 assembler on the BBC as the books were better, then I went back to a Spectrum."

Greg's hard labour resulted in two Spectrum titles – a platformer called *A Trick Of The Tale* and a maze game with tanks called *Podder*, both of which he planned to sell on an upcoming road trip – but not before starting preliminary work on a third title. "It was just myself, in my bedroom, and some crazy ideas drawn on the back of old dot matrix computer rolls," explains

▲ [ZX Spectrum] Jumping on this bed may be fun, but Dad's credit card is out of reach

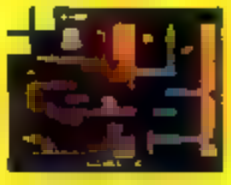
Greg when asked how this third project began "I have always read comics and still do and was a big fan of *Sweeny Toddler* from *Whoopee!* and *Whizzer And Chips*. I was sick of all the main characters of games being heroes and doing good and I wanted kids to be naughty because it's more fun. So that's how *Jack The Nipper* was born. *A Trick Of A Tale* was a poor *Manic Miner* clone developed to learn Z80 assembler, that was followed by *Podder*. I then started storyboarding *Jack The Nipper* and developed some sprites and mock up screens. I borrowed my dad's car and spent a few days travelling around north-west games companies Ocean and some others I can't remember, it was nearly 30 years ago. After receiving many 'We'll let you knows' I ended up – rather despondently at this point at Gremlin, my last port of call before heading home As they thought I showed promise, they asked me if I had any other ideas something the other companies hadn't bothered asking so pitched *Jack The Nipper* Gremlin asked me to continue, albeit unpaid, but with the hope of publishing "

On the basis of this gentlemen's agreement, Greg assigned his sister's boyfriend and his brother minor creative roles before briefly picking the brains of Gremlin's salaried staff "I spent a couple of days at Gremlin early on in the development," Greg recalls, "Shaun Hollingworth, Pete Harrap and Chris Kerry gave me some pointers. They wouldn't tell me all their secrets but hinted at what to do and worked the rest of it out myself But all the sprite routines were based on the help I was given by the lads. My younger brother John who was in secondary school at the time helped me along with some graphics and we bounced ideas off each other Nick Corran, who was my sister's boyfriend at the time, and a musician, came up with the tune. The game was written from scratch in Z80 Assembler I designed the whole thing, wrote the code, all the graphics, screens, maps and sound effects myself. It took bloody ages to do that whistle "

Jack's memorable whistle wasn't the only time-consuming aspect of the game's development, though, as Greg reveals. "I started with a single Spectrum and

▲ [ZX Spectrum] Knocking the china shop owner loses ancillary, Jack drops off a full porcelain party.

tape recorder and used Zeus Assembler I developed the game code in three parts which all linked to one another as Zeus resided in memory below 32,768 and each of the three blocks of source code were above – and built 4K of finished code – so there was a lot of faffing about. As development progressed and Gremlin became more comfortable with what was demoing every few months they gave me an Opus disk drive and that really speeded things up. The screens were drawn using a book bought somewhere which had blank Spectrum screens laid out like a checkerboard – 32 across by 24 down. So drew all the screens and built the drawing routines from that nitially I used pencil and paper to draw the sprites then typed in all the numbers like an idiot However, I thought there must be an easier way and used Melbourne Draw for all the on-screen graphics, sprites and masks and wrote a series of routines to pull them from the screen into the memory areas formatted ▶



DEVELOPER HIGHLIGHTS

WANTED
MONTY MOLE
(PICTURED)
SYSTEM: ZX SPECTRUM, C64
YEAR: 984

THE WAY
OF THE TIGER
SYSTEM: ZX SPECTRUM, C64, C16, AMSTRAD CPC
YEAR: 986

TRAILBLAZER
SYSTEM: C 6, COMMODORE PLUS/4, VARIOUS
YEAR: 986

▲ [ZX Spectrum, Shaun Hollingworth] *Grumpy Gumphrey* was a big influence on *Jack The Nipper*'s faux-3D locations.

BYTE-SIZED BABIES

BABY JO
■ The bickering of Wally and Wilma Week (the former's first found fame in Mikro *Gen*'s classic arcade adventure everyone already before going on to star in *Flintstones Rumble* and play a supporting role in *Three Weeks in Paradise*.

BABY JO
■ French developer Loriciels' Jet Axel style baby appeared in a whimsical scrolling platformer titled *Baby Jo in Going Home*. The baby-themed game had Jo throwing rattles at his foes, collecting their nappies and drinking bottled water.

CHUCK JUNIOR
■ Before Jamie Rawlin Core Design was best known for its popular *Chuck Rock* series, the second of which was called *Chuck Rock II – Son Of Chuck* and featured the prehistoric exploits of a club-wielding baby called Chuck Junior.

BABY HEAD
■ Nineties brawlers often made little sense. Take Capcom's Captain Commando for example, which features Baby Head – a two-year-old fighter who pilots a robot that punches, kicks and shoots his way through futuristic battlefields.

BABY MARIO
■ You can't talk about videogame babies with mentioning Baby Mario, especially since the little tyke has likely made more appearances than any other toddler in gaming. His first outing was in the excellent SNES platformer *Yoshi's Island*.

▲ [MSX] Greg Holmes and Pete Harrap ported *Jack The Nipper* to the MSX in a morning.

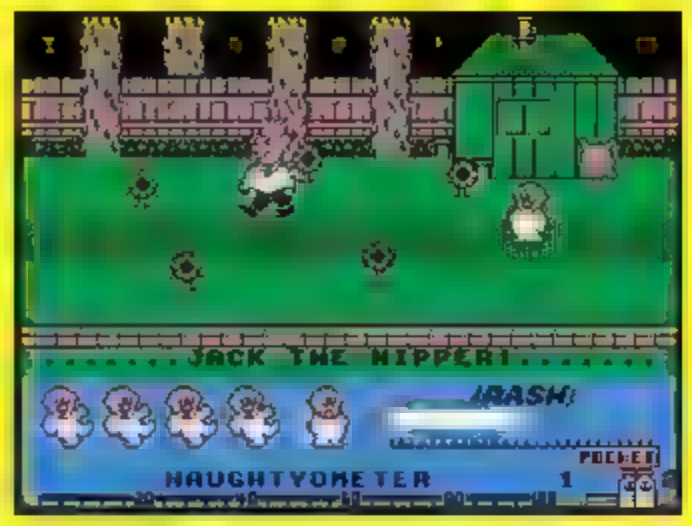
▶ the way I wanted them. Because of the big sprites I had to use illegal Z80 instructions because I ran out of registers. had read an article in *Personal Computer Weekly* on this and then applied it to the sprite routine and that took some getting your head around. also had to design the screens a certain way to allow objects to smash when they were dropped."

As he made progress on the game's coding and graphics, Greg fine-tuned the title's mechanics and gameplay and worked out the devilish pranks that Jack would perform. "I liked the way *Grumpy Gumphrey* had turned out, I felt that its semi-3D effect really captured the idea of a comic on the screen," reasons Greg, "so used that idea in *Jack The Nipper*. Part of the gameplay was to be naughty and avoid being chased so the game needed the in-and-out-of-the-screen movement to be able to avoid everyone. I came up with many of the pranks but some were lifted from *Sweeny Toddler* stories – like the prisoners being released. However the cat and horn was stolen from a favourite *Looney Tunes* cartoon called 'No Barking' where a dog barks and scares a cat up to the ceiling."

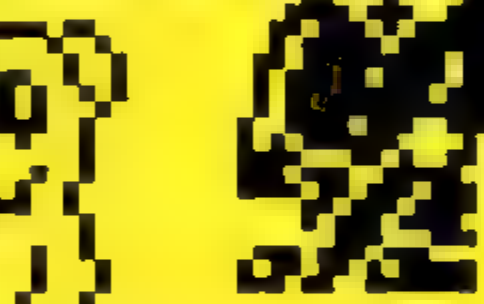
With work nearing completion on *Jack The Nipper* and it owing so much to the comic strip *Sweeny Toddler*, Gremlin unsurprisingly looked into the idea of adapting Greg's work into a licensed version of the then-popular comic character. "We did look into it, but it was thought that extra time and cost would be incurred, not only from the licensing but also from IPC wanting to *change* things," Greg remembers. "As the game was fully formed we really didn't see the need. By the time it came to publish I was given a job at Gremlin and worked with Pete Harrap who created the loading screen."

By way of in-jokes, Pete Harrap's loading screen credited "Nick Laa" as musician rather than Nick Corran and the finished game included a location familiar to everyone at Gremlin. "Nick was from Ellesmere Port and was a 'scouser' and used to call everyone 'La', so that's

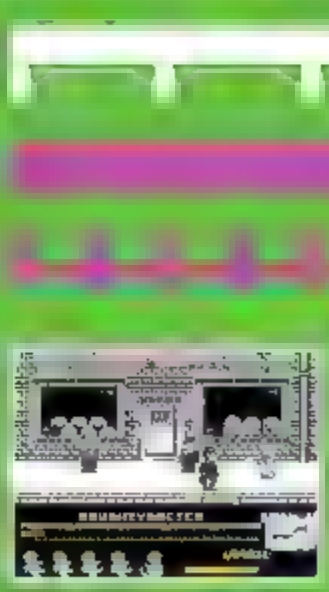
▶ [C64] The C64 port saw Greg Holmes working with coder Jason Perkins and artist Mark Rodgers.



▶ [Amstrad CPC] New graphics and sound were produced for the Amstrad version of *Jack The Nipper*



CAUSING CARNAGE



the reason," says Greg, with a grin. "Just Micro was the computer shop set up by Ian Stewart and Kevin Norburn – who set up Gremlin – so I put the shop into the game."

With the game finished and the title's loading screen in place one final task remained: *Jack The Nipper* needed box art, which Gremlin boss Ian Stewart had the final say over. "I was really cheased off with the look," Greg scowls, "Gremlin used a local firm to create the cover art who didn't really understand where I was coming from. I wanted the whole box art to feel like a comic and wanted it to read like a comic-strip. They created this awful little kid who looked nothing like Jack The Nipper – who was a bald baby. However, Ian Stewart thought it was great so that's what we ended up with."

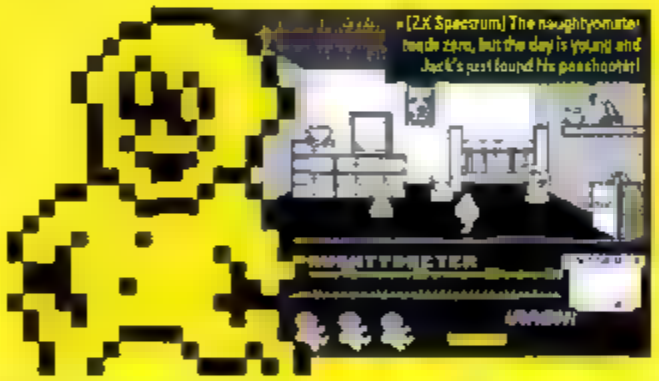
Although disappointed by its front cover, Greg was far happier with the critical response his game received. "It was like a dream come true," Greg enthuses, "Ian Stewart was particularly pleased as it was released at the same time as the first really big licensed arcade game, *Ghosts 'N Goblins*, and *Jack The Nipper* made the front page of *Crash* – not it. Also for your first game, getting that acclaim was amazing. It made all the effort worthwhile, and I was then able to pay off my debts with the royalties as I'd exhausted my funds and had to borrow from my parents to keep going."

Jack The Nipper's success on the Spectrum inevitably led to versions for other popular systems, all of which Greg had a hand in producing. "Pete Harrap and I ported the Amstrad version which took quite a while if I remember as we had to redo the graphics and sound," Greg recollects. "However, believe it or not, we converted the MSX version in a morning. We took my source code and imported it into the Gremlin development system, which was a 68000-based Pinnacle 'mainframe' computer with Wyse terminals used to code with. Pete knew the architecture of the MSX so we had only to change the screen, sound, keyboard and joystick routines. The rest of the Z80 code didn't need changing. As for changing the graphics, the MSX only sold about 2,500 copies at the most so the return on investment was not enough to re-draw them. For the C64 version, I worked with Jason Perkins and Mark Rogers and gave them all the screen setups and graphic layouts. I helped with the way the game worked, but Jason did most of the coding and Mark the screens and graphics."

But as well as demand for ports of Greg's game, the popularity of *Jack The Nipper* also created a couple of problems for Gremlin. "There were two secretaries – Sue and Sarah – who were deluged with calls, so I had to produce a list of tips such as 'Get the key to open the radiator in the museum.' The girls were great, there wasn't any hassle, just more mickey-taking than normal. For the music we used Wham! The Music Box, as I liked the way it produced two-channel sounds. However, Ian Stewart wasn't happy a couple of weeks after *Jack The Nipper* was released when the author made him pay £200 for its use in the game."

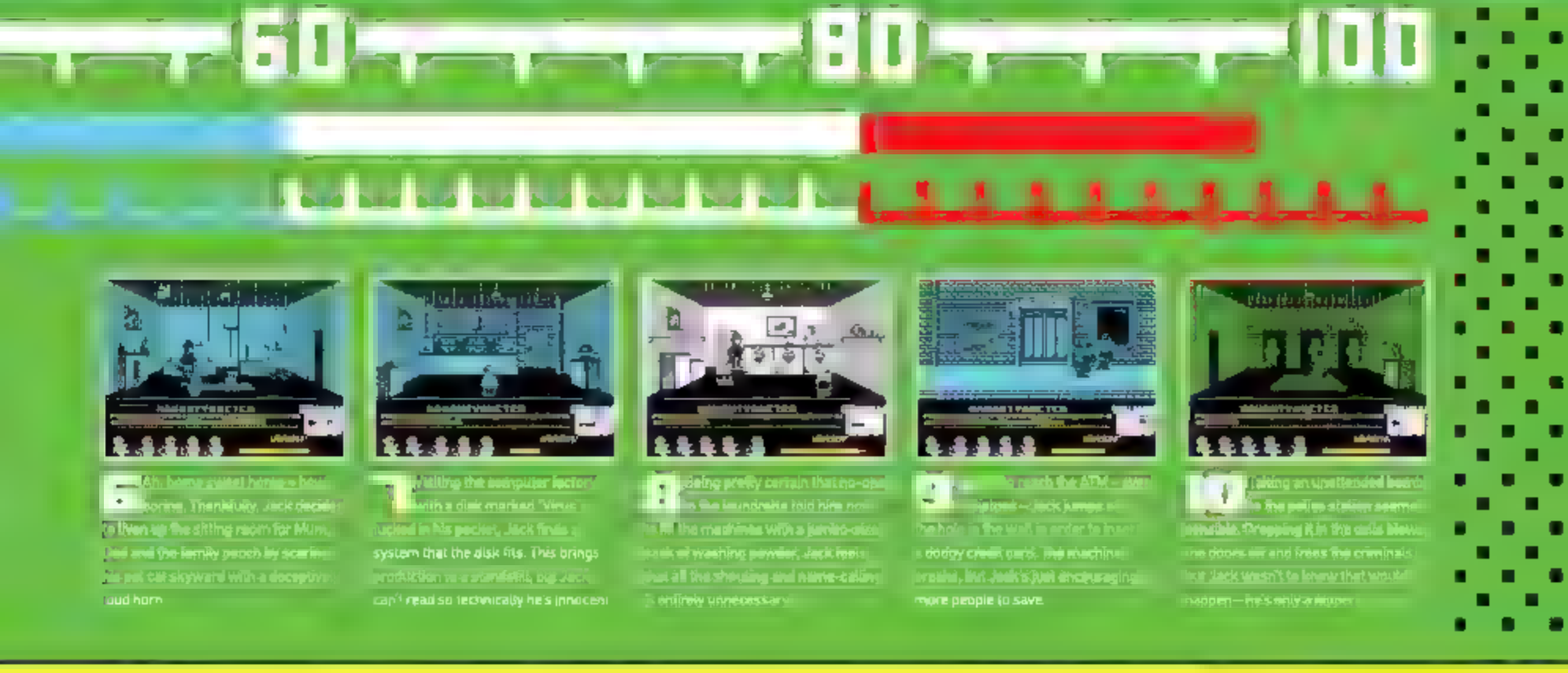
When asked how he feels about *Jack The Nipper* now, Greg makes it clear how fond he is of his creation and concludes with a suitably cat-unfriendly regret. "I do feel proud. I work in IT now, and what's really unusual is that I meet people in their twenties and thirties who played *Jack The Nipper* as kids and had no idea it was written in their home town of Barrow in Furness. In hindsight, if there's one thing I would change about the game – I would have made the cats move quicker!"

Many thanks to Greg Holmes for his time, answers and fascinating anecdotes.



• [ZX Spectrum] The naughtyometer reads zero, but the day is young and Jack's just found his peashooter!

• [ZX Spectrum] Jack avoids Mum, Dad, the family dog and a ghost while crossing the living room.



6 Ah, home sweet home – how boring. Thankfully, Jack decides to liven up the sitting room for Mum, Dad and the family peach by scaring his pet cat skyward with a deceptive loud horn.

7 Visiting the computer factory with a disk marked 'Virus' tucked in his pocket, Jack finds a system that the disk fits. This brings production to a standstill, but Jack can't read so technically he's innocent.

8 Being pretty certain that no-one in the laundrette told him not to fill the machines with a jumbo-size break of washing powder, Jack feels that all the shouting and name-calling is entirely unnecessary.

9 [illegible] reach the ATM – [illegible] – Jack jumps [illegible] the hole in the wall in order to insert a dodgy credit card. The machine crashes, but Jack's just encouraging more people to save.

10 Taking an unattended bomb in the police station seemed sensible. Dropping it in the cells blows the doors off and frees the criminals. But Jack wasn't to know that would happen – he's only a nipper.

BOY WONDER

A GAME BOY RETROSPECTIVE

It's been 25 years since the world first glimpsed the Game Boy, the creation of veteran designer Gunpei Yokoi and his team at Nintendo. To celebrate its birthday, we took a look back at that most modest of handhelds and finds out what made it such a massive success

It's often said that there are no surprises in gaming anymore. In this connected age we now know everything, instantly. The days of walking into a shop and being blindsided by new gaming hardware and software are dead and gone.

But things haven't really changed that much. It was just less immediate in the past, with gamers having to rely on magazines drip-feeding information about exciting new products. This was certainly the case with the Game Boy, the Nintendo handheld that launched in Japan in April 1989 and the US shortly after but wouldn't arrive in Europe until September 1990. The long-running and respected UK magazine *Computer & Video Games* dropped the first details in its May 1989 issue, calling Nintendo's new machine a "micro-marvel". There was a product image too, allowing readers to scrutinise its key characteristics: the D-pad and button configuration, the grey-coloured shell, the yellowy-green screen. Displayed on the screen was a little something called *Super Mario Land*.

It wasn't possible to judge the size however. There were no hands gripping the Game Boy for comparison. All was revealed in the July 1989 issue of *C&VG* when deputy editor Julian Rignall got his own hands on a Japanese Game Boy for an import review. "There's a new Nintendo console in town," wrote Jaz. "It fits comfortably in the palm of your hand, has its own tiny TV screen, and the games come on cartridges the size of a matchbox. Sounds too good to be true?"

Happily Jaz revealed that the Game Boy was not just real but rather quite brilliant. "The console fits in your hand perfectly," he remarked. "Playing games on it is a joy!" While he praised the sharpness of the graphics on the LCD screen, he did note blurry scrolling as a caveat. It was revealed that the handheld was powered by four AA batteries, but no mention of how many hours of play they offered. Clearly Jaz wasn't changing them often enough for it to be regarded as an issue. Meanwhile, key Japanese launch title *Super Mario Land* was described as "unbelievably addictive". The review ended with some impressive sales claims from Japan. 500,000 units sold to date, with 300,000 snapped up at launch. Elsewhere in the issue the Game Boy was called "The future of handheld gaming". As Jaz's review was a UK exclusive you could forgive *C&VG* for laying it on thick, yet that statement would turn out to be beautifully prophetic. ▶

SCORE
377
LEVEL
6
LINES
1
Nintendo GAME BOY™
B
SELECT
START

"I found the Game Boy to be a very simple and easy machine to code for"

R-Type II programmer Bob Pape

When the Game Boy finally arrived in Europe almost 18 months after its Japanese debut, there were just half-a-dozen games released alongside it. Of these, *Super Mario Land*, *Tennis* and *Golf* were the must-have titles. One title you didn't have to buy was the revelatory Game Boy version of *Tetris* as it came bundled with the console. This smart move had worked wonders for Nintendo in the US, leading to stellar sales (a reported million units were sold within weeks of its launch); European gamers could now dream of falling blocks too as *Tetris* fever took hold. It really was the perfect pack-in – the ultimate game on the go.

The success of the hardware quickly led to a flood of fresh software that identified the Game Boy as a diminutive yet capable contender that could punch above its weight (which was a lean 300g including batteries, if you were wondering). In its first couple of years the handheld was home to some fantastic original titles such as pinball sim *Revenge Of The 'Gator*, platform adventure *Gargoyle's Quest* and the Game Boy exclusive sequel *Metroid II Return Of Samus*. There was also plenty of decent and undeniably attractive licensed fare like *Teenage Mutant Ninja Turtles*, *RoboCop* and *Batman*. Coin-ops were converted too with varying results as you might expect, although *Double Dragon*, *Nemesis* and *R-Type* were all admirable attempts.

The Game Boy's custom processor which was essentially a Z80 with some bits missing and others added, ensured that many programmers could move over to the machine with little problem. Bob Pape, who coded the celebrated Spectrum version of *R-Type*, went on to develop *R-Type II* for the handheld. "I found the Game Boy to be a very simple and easy machine to code for," he says.

The hardware of course had limitations but then that was the same for all early 8-bit consoles and computers. Some people may have had problems dealing with the limited instruction set of the custom Sharp processor that the Game Boy used, compared to the Z80, but think for those programmers who were used to having to scratch for every last byte out of a 1K ZX81 or 48K Spectrum through tight coding then it was almost like coming home.

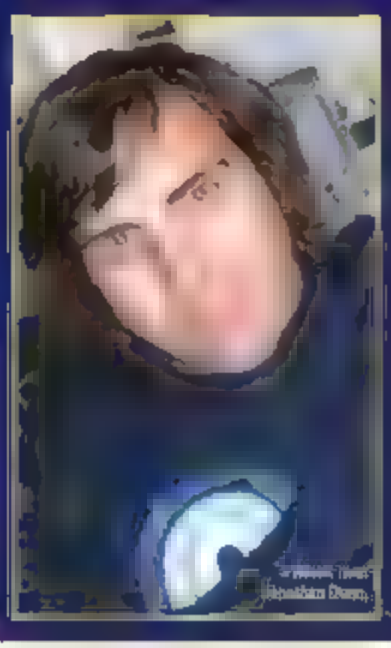
In the past Nintendo has been accused of providing developers with vague or incomplete documentation, but in Bob's experience this wasn't too much of an issue as the hardware was pretty much an open book. "Well if you don't know what's missing then you can't say it's not there!" he comments. "It's more likely that certain coding techniques were kept quiet to give companies an edge – things like how to multiplex the sprites or give the appearance of seven shades of grey. Other ways of programming the hardware were so obvious they didn't need documenting."

Another Z80 developer who gladly moved over to the Game Boy was Ken Murfitt. "In many ways the Game Boy was easier to program that the other Z80 platforms," says Ken, who came chiefly from an Amstrad CPC background and developed *Double Dragon 3* and *The Lawnmower Man* for

You won't get very far without using these

MUSCIAL' INTERLUDE

Jonathan Dunn composed for many Game Boy titles, including the RoboCop theme used on that washing machine advert...

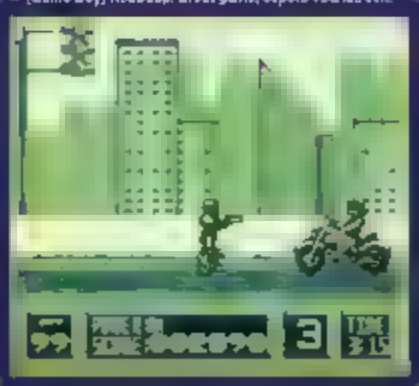


What were your immediate thoughts on the Game Boy as a gaming platform?

When I first tried a Game Boy I thought it was a great little device. Of course the first thing I played was *Tetris* and I was hooked. I also remember that you could connect two Game Boys together and play two-player *Tetris*. That was the first time I'd seen anything like that.

How would you rate the Game Boy's audio capabilities?

The Game Boy had some interesting characteristics. It had a waveform that you could program yourself – as 4-bit samples that you could define. I remember getting it to make some unusual noises. I also liked the fact that you had some control of stereo placement, though I wish I'd used that a bit more in the work I did. Quite a lot of the stuff I did for the Game Boy was a port from another version so I didn't get to spend enough time experimenting with the possibilities.

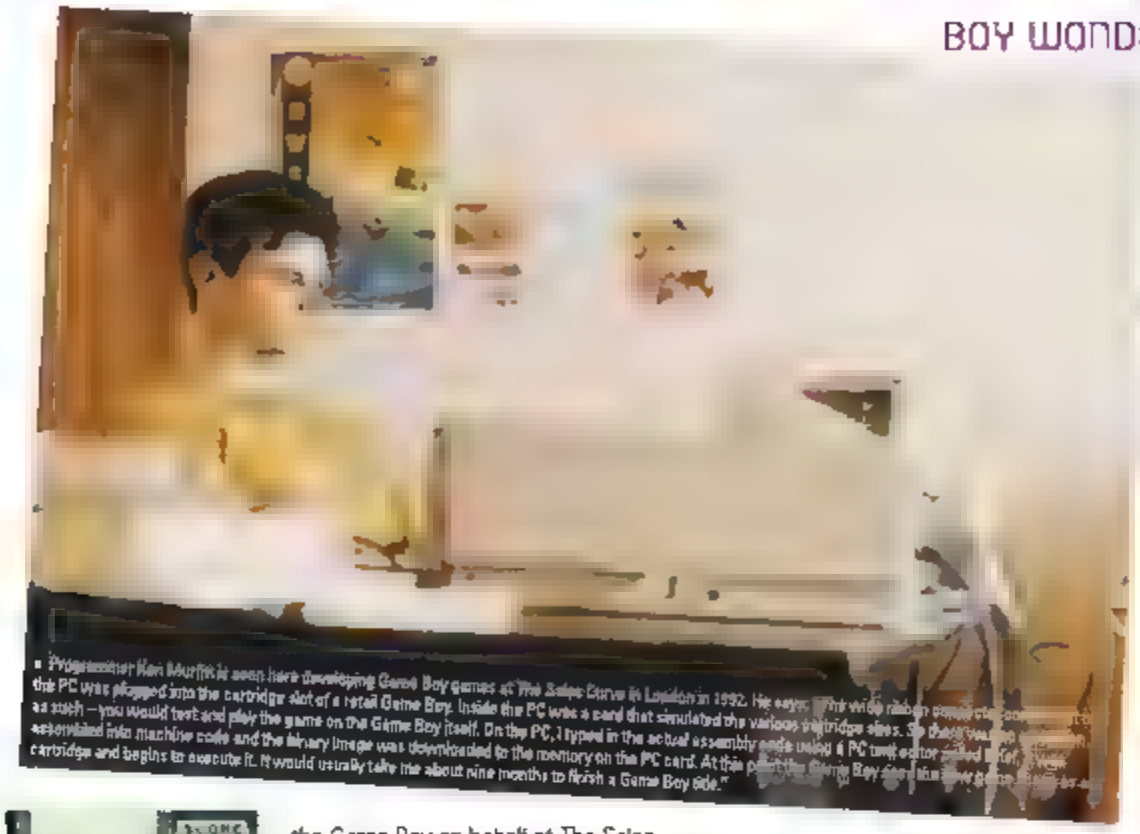


(Game Boy) RoboCop. Great game, superb soundtrack.

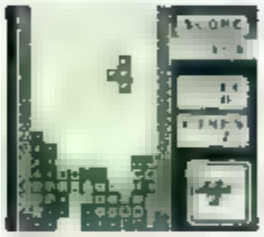
Did you encounter any technical challenges at all?

I coded my own driver for the C64 and NES and SNES, but at the time didn't have enough knowledge of Z80 to do the audio driver that we needed. So Ocean's John Brandwood was roped in to convert the Spectrum driver, with a few modifications. I wasn't happy with the hardware volume envelopes, so I got John to add a more versatile software envelope system that gave me more accurate control. It had disadvantages as it effectively reduced the bit resolution of the volume, but it did allow me to sync the envelopes with other note-based events.

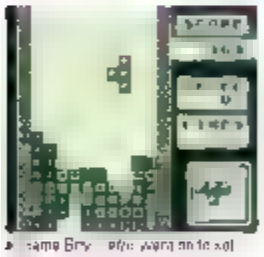
***Your RoboCop* title theme is still used and sampled to this day.**



■ Programmer Ken Murfin is seen here developing Game Boy games at The Sales Curve in London in 1992. He says: "[illegible] this PC was plugged into the cartridge slot of a retail Game Boy. Inside the PC was a card that simulated the various cartridge sizes. So there was [illegible] as such – you would test and play the game on the Game Boy itself. On the PC, I typed in the actual assembly code using a PC text editor called [illegible], which assembled into machine code and the binary image was downloaded to the memory on the PC card. At this point the Game Boy saw [illegible] cartridge and begins to execute it. It would usually take me about nine months to finish a Game Boy title."



■ Game Boy! Tetris was the Game Boy killer app. It was the perfect hand-held puzzler and was a must-have for the new handheld.



■ Game Boy Wars went on to sell millions, benefiting solely from being a back-in title.

the Game Boy on behalf of The Sales Curve. "It was exciting to use real sprite and background-scrolling hardware, after so many years of squeezing every last instruction out of platforms like the CPC and Spectrum. No more pre-shifted sprites that hog memory, sprite masking or the Z80 stack tricks required to perform background scrolling. You could just set up the sprite buffers one time and scrolling hardware registers once per frame and go. Obviously it was a step backwards in terms of colour count – there were four levels of grey against the Amstrad's palette of 27 colours. You could get in-between greys using flickering but it was visually distracting and so – preferred dithering."

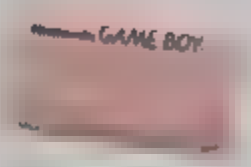
So developing for the Game Boy wasn't particularly difficult for seasoned programmers, but Ken notes there were a couple of unexpected considerations. "The first was battery life. The processor was put to sleep using the HALT or STOP command after processing had been completed for a frame, and this would minimise battery drain until the next vertical blank. 60 times per second. It was surprising to me at the time that the battery life could be extended by saving power during these tiny slices of CPU down time."

And then there was the odd entity known as 'Version Zero Game Boy'. Ken explains: "There were these early production Game Boys of which only a few thousand units existed in the world and Nintendo insisted that any submitted title must run perfectly

GAME BOY BOLT-ONS

Some of the not-so-silly accessories you could buy for your Game Boy

BATTERY PACK



■ Not the most exciting accessory or most essential seeing as the Game Boy was the least power-hungry handheld. But when your AAs did finally give up, this add-on was good for up to ten hours of extra play. And if you were more likely to be found playing Game Boy at home, it also doubled as a handy AC adapter.

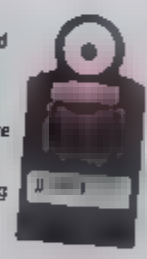
GAME LIGHT

■ The Game Boy was unplayable in low-light conditions so there was no shortage of third-party add-ons designed to brighten up the display. The Game Light from Nubi was one such solution that bolted on to the front of the screen. It required four AAs batteries so it was probably cheaper to find a decent light source instead.

AMPLIFIER

■ Another accessory from Nubi, this device plugged into the headphone socket at the bottom of the Game Boy and boosted the audio output. Sound was louder and also in stereo. With so many ridiculous-looking add-ons available for the Game Boy, this one deserved points for at least trying to match the Game Boy's style and form.

GB CAMERA

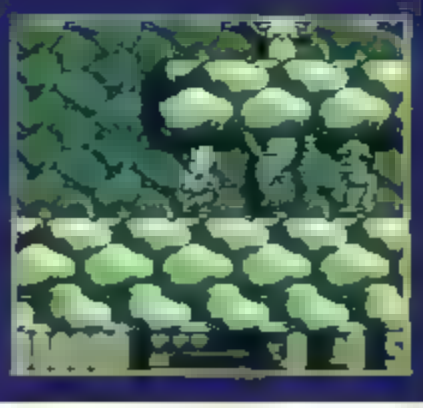


■ This quirky add-on was released in 1998 and turned the Game Boy into a compact digital camera (shortly before digital cameras became commonplace). In addition to snapping and reviewing photos, there were a number of built-in games that would feature the player's grinning mug. They were borderline terrifying, in all honesty.

GB PRINTER

■ If you had a burning desire to print the grainy, black and white photos you'd taken using the GB Camera then you clearly coveted this tiny thermal printer. Otherwise, a bunch of games supported the device, allowing you to print out high scores, screenshots and the like.

■ Not just any old Game Boy – this one owned by RG's Paul Drury, is signed by Alexey Pajitnov.



■ Game Boy Klax was another game that benefited from Jonathan's music.

Does it surprise you personally that it's continued popularity will surprise you?

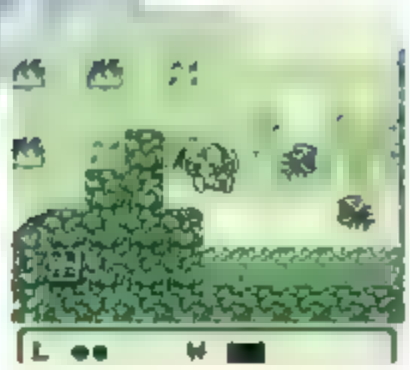
I don't think anyone could have guessed that the *RoboCop* theme would become so memorable. At the time it was just another game. It was the norm to produce stuff very quickly and there was always another project looming at Ocean, so you didn't really get time to think about it. If I look back at all the different versions of the same piece of music I had to do, I wonder how I did it! That tune in particular has been sampled a lot and it's great that it's still around.

Do you receive any payment when the *RoboCop* tune is used?

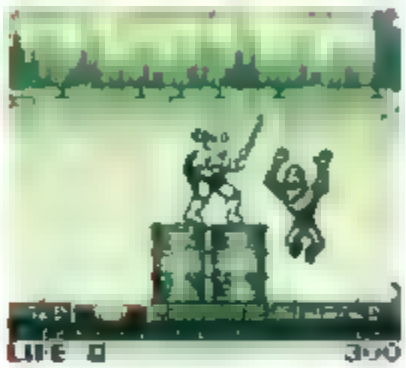
I now collect writer royalties whenever the track is used, though I didn't receive anything when it was used in the Ariston advert. I think Ocean thought it was just getting some free PR and marketing.

What are you up to these days?

For the last two years I've been living in Slovenia working as CCO for a games company called BZoeT. I'm also the co-founder of Fatleg Games, a mobile games start-up. I still code, I still write music. It's fun to make small games for mobile. It feels a little like it did in the old days. You don't need massive teams to produce something fun.



▪ (Game Boy) Capcom's *Gargoyle's Quest* was a fun spin-off from arcade hit *Ghosts 'N' Goblins*



▪ (Game Boy) If there was a craze then it was all over the Game Boy. There were three *Turtles* games in total.

▪ If you want to play multi-player games or use peripherals you'll need this part.

> **"Nintendo created games that worked well on a small screen with no colour"**
>
> Graphics artist Elliot Curtis

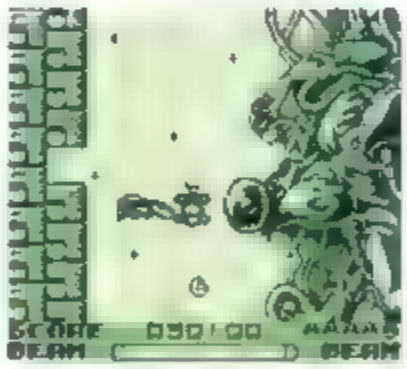
on them. The difference was that the video memory was slightly slower in some respect and problems would be apparent with partially scrambled background tiles appearing in your game due to memory contention. It was a shame because it further restricted how many background blocks you could update during the video blank.

Due to the Game Boy's small screen and limited colour palette, it was the job of artists to ensure that the graphics, and in particular sprites, were as clear and defined as possible. It was a challenge that Elliot Curtis relished. Working for Tiertex Design Studios, he created Game Boy graphics for various Disney licences and *FIFA* entries. "To be offered the chance to make games on a console was a dream," he says. "Yes the Game Boy was limited but the other consoles at the time were actually a bigger struggle to create graphics for. The first time you created a sprite and saw it running on a Game Boy screen was amazing. It always looked way better than it did in Deluxe Paint."

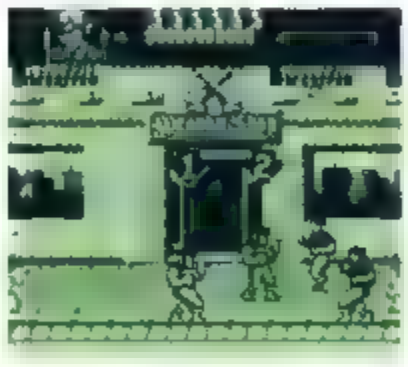
The biggest headache occurred when creating full-screen images, such as title screens, due to display limitations. "A Game Boy screen is divided into an eight-by-eight grid and each square in that grid is a character," he explains. "When you create a full-screen picture you can actually only use about 21 unique characters. It was nowhere near enough. We had tools from the coder to highlight individual characters once we drew anything, and then we had to be creative by using flipped and rotated characters within the picture. It's always depressing butchering a nice picture but often it was required assets for a licence and there wasn't any scope for creativity. Publisher or licence logos are boring enough to draw without spending all day editing them to make them actually work on the screen."

Elliot's later games were specially optimised for use with the Super Game Boy, the device that enabled Game Boy carts to be played on the Super Nintendo console, often with added colour. Explaining the process, Elliot says: "Colour would be designed into the graphics from the start... would have four separate palettes of four colours each. I used to work on the Spectrum so the eight-by-eight character colour issues weren't new to me, but Super Game Boy graphics were a pain. The number of people who were ever going to actually see them was so small it seemed like a bit of a waste of time. I actually put a footballer in the border for *FIFA 98* in a Watford strip and got away with it."

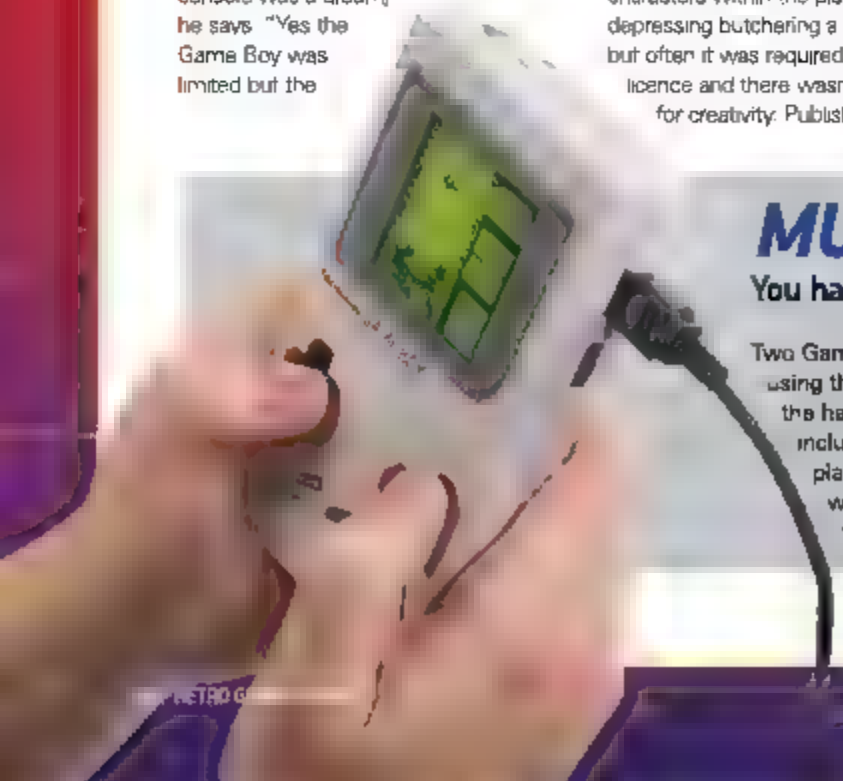
Super Game Boy games at least looked better in magazines... as anyone who tried to screen-grab original Game Boy titles will tell you. Nick Walkland worked on Europress's *GB Action*,



▪ (Game Boy) Bob Page's *R-Type II* conversion was an improvement over its already fantastic predecessor.



▪ (Game Boy) Street brawler *Double Dragon 3* supported cooperative play on the Game Boy.



MULTIPLAYER ON THE MOVE

You had a Game Boy. Your friends had Game Boys. Game on!

Two Game Boys could be connected together using the link cable that was initially bundled with the handheld. Conveniently, pack-in title *Tetris* included a fantastic two-player mode where players battled it out as Mario and Luigi. It was simple but genius and elevated *Tetris* to even greater heights.

As most Game Boy owners had a cable, lots of titles included two-player support. Sports titles like *Tennis* and *Golf* offered gentle competition while fighting games such as *Mortal Kombat* and *Killer Instinct* let you go toe-to-toe with a pal. The two *Double Dragon* sequels allowed you to team up with a friend and clean up the streets together.

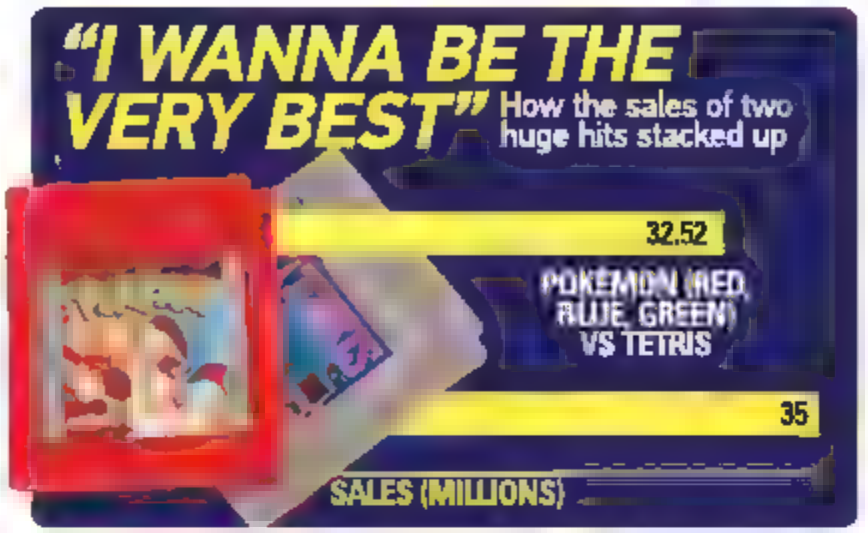
▸ (Game Boy) 'Epic' is not a word you'd ever associate with Game Boy games, but *Link's Awakening* came pretty close

the UK's first dedicated Game Boy magazine which debuted in 1992. "Game Boy games were a complete pain to screen-grab," says Nick. "We actually took photos because it was so tricky. The Game Boy was placed in this glorified cardboard box, with a black cloth around the entrance, which you put your head inside. Like a Victorian snapper but without the phosphorous flash. But there was always motion blur and when you tried to pause games they tended to come up with a pause screen. To make matters worse the Game Boy looked, well, awful. A bland greeny-grey, with shades in-between."

Nick is not alone in his jack of love for the Game Boy. "It was awful," laughs Ed Magnin, a programmer who'd previously worked for MicroProse and Cinemaware on Apple II and IIGS software before moving onto the Game Boy at Virgin Games. "The processor was like a Z80 but it wasn't a complete one, and there were banks of memory and the memory had to be switched in and out. So if you had a piece of artwork it wasn't just a question of whether it would fit into the cartridge, but where you had a hole to put it where it wouldn't straddle banks. You know, up until the Nintendo DS I've always said that it was our job as programmers on Nintendo platforms to make bad technology look better than it should have."

Despite his aversions, Ed was responsible for the fantastic and faithful Game Boy version of *Prince Of Persia*. For this he also had to contend with Nintendo's famously dim view on videogame violence. "Nintendo had these policies where no-one ever died in a Nintendo game," he says. "So for *Prince Of Persia* the first thing we looked at was the slicer. We raised this and Nintendo said it was okay as long as we didn't show any blood. Even on the Game Boy they didn't want a big black puddle oozing out! The pop-up spikes on the floor were also a problem. Years later I found out that Nintendo didn't like what it called 'body deforming violence'. It was okay to get killed but not have the spikes popping out of your back."

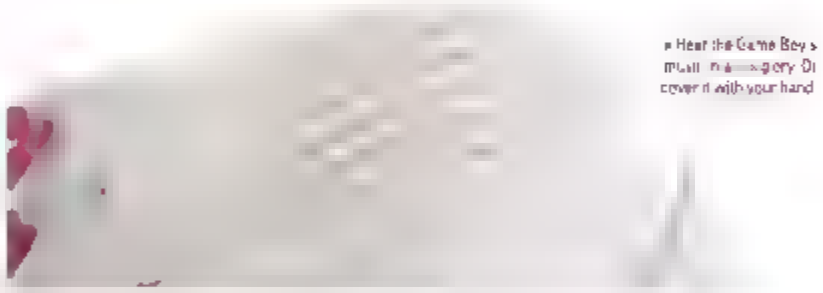
For Ed and other developers, whether they were fans of the hardware or not, it was clear that Nintendo had devised a hugely popular platform. The Japanese firm had hit gold with the Game Boy. "It was my daughter who actually got me started on Nintendo," says Ed. "She was in kindergarten and I was out of work as the company I'd just finished a game for had gone out of business. It was hard to find a job and my daughter said 'Dad you should be doing Nintendo!' And she was right. All of the kids had one."


"I WANNA BE THE VERY BEST" How the sales of two huge hits stacked up

The Game Boy quickly established itself as the world's number one handheld, and this was in the face of competition from rival machines that arrived shortly after. The Atari Lynx, Sega Game Gear and PC Engine GT (TurboExpress) with their colour screens and superior hardware, looked like a clear generational leap over the Game Boy. It really was men against boys, on paper at least. But the Game Boy subverted expectations and emerged as the clear winner.

The reasons for its success are fourfold. Firstly, the Game Boy was the fastest to market so it was the first portable to capture the interest and imagination of the public. And not only was it first but it was the least expensive too. Prices obviously varied from region to region, but in anyone's language the Game Boy undercut the competition significantly. Further discounting would push the Game Boy towards an impulse purchase price point. The third factor was battery life. Four AA batteries would power the Game Boy for up to 15 hours (and possibly longer if the speaker wasn't too troubled). Rival handhelds were much hungrier, requiring more batteries and exhausting them far sooner. Having to continually buy or recharge batteries was never ideal.

Finally, and crucially, there was the Game Boy's vast library of games. More than 700 titles were released over a period of ten years. Third-party production was plentiful and Nintendo itself continued to support the machine throughout its lifespan. Three *Super Mario Land* sequels appeared in 1992, 1994 and 1998, while the release of *The Legend Of Zelda: Link's Awakening* in 1993 showed that the Game Boy could deftly entertain sprawling adventure games. There was a brace from ▶



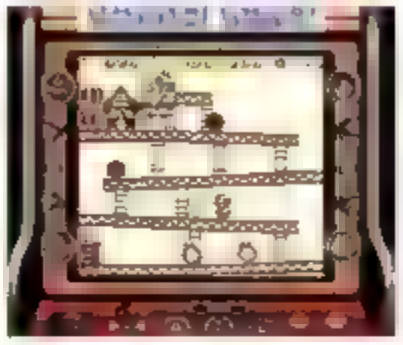
▸ Hear the Game Boy's music in a category. Or cover it with your hand

▸ There's no backlight on the original Game Boy, so adjusting the contrast is a must

▸ The On button for the Game Boy also acts as a very handy cartridge lock. Not like they'd fall out

Double Dragon 3 programmer Ken Murfitt reveals that developing co-op play was tough. "There were some interesting lessons," he says. "It required the efforts of myself and another programmer, Tom Prosser, to test the game – you couldn't flush out all of the synchronisation bugs by yourself. I learned about packets and timing issues. For example, no two Game Boys run at exactly 60Hz – one will be slightly slower. This may sound obvious now but you could not rely on only the vertical blank to synchronise your two-player game."

One of the most popular uses of the link cable was transferring Pokemon between the Red and Blue versions (if you were determined to catch 'em all then linking was mandatory). Battles could be staged between collectors too. A special four-player adapter was also available, although it was only supported by a small number of games. Notable titles included *F-1 Race* (with which the adapter was bundled), *Super RC Pro-Am* and *Gauntlet II*. A mention must also go to *Faceball 2000*, a Game Boy FPS that included support for up to 16 players.



▲ *Donkey Kong* 1994 featured enhanced graphics and a retro border when played on the Super Game Boy

▲ Game Boy in *Gauntlet II*, four players could work together – just like in the arcades

▶ everyone's favourite gorilla too, with the arrival of *Donkey Kong* in 1994 and the first of Rare's *Donkey Kong Land* games in 1995. And just when the Game Boy was starting to look tired, along came *Pokémon* in 1996. The *Pocket Monsters* phenomenon ambled its way West over the next few years and gave the Game Boy a shot in the arm.

Nintendo would refresh the hardware too. The Game Boy Pocket arrived in 1996, sporting a sleek new form and clearer LCD screen. This was followed by the Game Boy Light in 1998, a Japanese exclusive that featured a backlit screen. The long anticipated colour screen Game Boy arrived later in the same year and effectively replaced the original model. Prior to the release of the Game Boy Color, Nintendo revealed that the original Game Boy had sold in excess of 64 million units worldwide.

For graphics artist Elliot Curtis, the key reason why the Game Boy was such a sales success in the face of 'superior' competition was down to its gaming library. "It was Nintendo so it had the best games," he says. "Obviously *Tetris* shifted the units in the first place, but then you could also play *Mario*. Nintendo created games that worked well on a small screen with no colour. Everybody else seemed to be making versions of existing games that were inevitably inferior to the 'proper' version."

▲ Look away now Nintendo – the Prince attempts to pass a deadly spear

Programmer Ken Murfitt agrees. "Something that Nintendo understood well was that consumers enjoy straightforward products that are accessible, robust and low cost, but if I had to sum up the success of the Game Boy in one word it would be 'Tetris'."

Having experienced the Game Boy before most, Jaz Rignall is ideally placed to comment on how it held up over time. Despite the arrival of flashier portables, his appreciation of the Game Boy did not diminish. "If anything, the more I played the competition the better Nintendo's little grey brick looked," he says. "Anything with a colour screen ate batteries as fast as you could shovel them in. The Game Boy was relatively frugal, making it much friendlier on the pocket, energy-wise. It was also nicely designed. These days it looks hefty, but you could hold it and play it for hours comfortably. It was also built like a tank. The Lynx and Game Gear were fragile by comparison. I never had any qualms about bunging it into a bag and taking it anywhere. I loved the PC Engine GT but it was expensive, and some of its games were unplayable because they'd been designed for a big screen. It was also one of the all-time greats for consuming batteries. Ultimately it's about the games and not the tech, and the Game Boy proved that it had a range of really fun carts – and *Tetris* was a killer app."

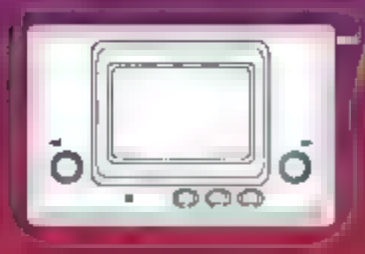
Jaz also notes the importance of handhelds to Nintendo's business over the years – from the Game Boy through to the Game Boy Advance, DS and now 3DS. "Just one look at Nintendo's numbers show how much revenue handhelds have brought in. The importance of those numbers has varied from generation to generation, but when Nintendo's flagship console hasn't done so well, handheld success has been critical. The 3DS is a good example of that. Remove its figures from Nintendo's financials from last year and things would be looking pretty dismal."

So what now for Game Boy? When the DS was introduced in 2004 Nintendo made it clear that the Game Boy name was not being retired. Given the firm's current difficulties with the Wii U, there's a possibility we may see a new Game Boy at some point. Imagine a stripped-down handheld designed specifically for playing retro games – essentially a portable Virtual Console with access to not just Game Boy games, but titles from those rival handhelds that once tried to outmuscle the small but mighty Game Boy. That would be a nice surprise ✱

Special thanks to Warez, Bournemouth (retrowarez.co.uk) for its help with this feature

NINTENDO'S HANDHELD HERITAGE

An essential timeline to gaming on the go – Nintendo style



GAME & WATCH: 1980 ONWARDS

1989

GAME BOY

1998 — 1998 — 1996

GAME BOY COLOR — GAME BOY LIGHT — GAME BOY POCKET

> The more I played the competition the better Nintendo's little grey brick looked
>
> Games journalist Jaz Rignall

GAME BOY ADVANCE

2001 — 2003 — 2005

GAME BOY ADVANCE — GAME BOY ADVANCE SP — GAME BOY MICRO

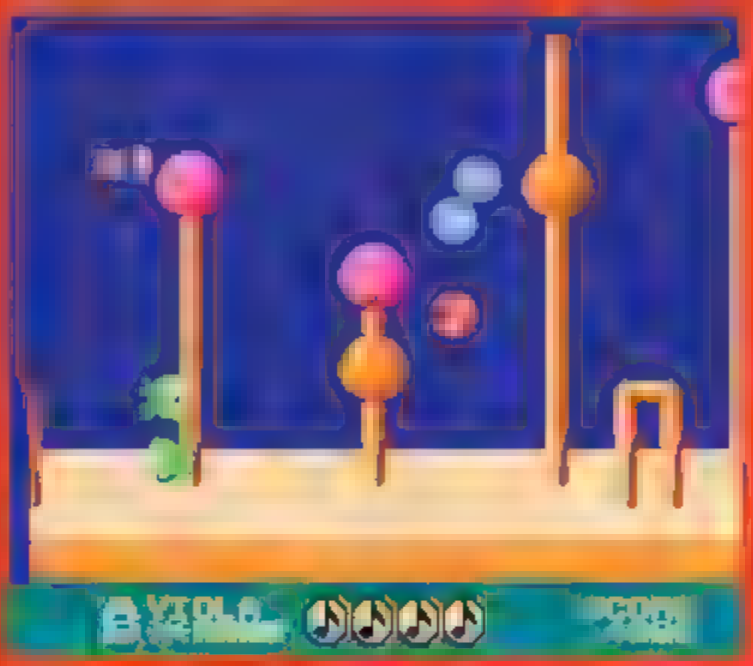
NINTENDO DS

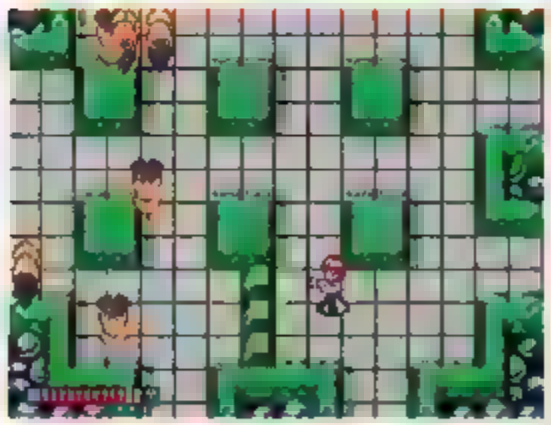
2004 — 2006 — 2008 — 2009 — 2011 — 2012 — 2013

NINTENDO DS — NINTENDO DS LITE — NINTENDO DSi — NINTENDO DSi XL — NINTENDO 3DS — NINTENDO 3DS XL — NINTENDO 2DS

Minority Report

OTOCKY

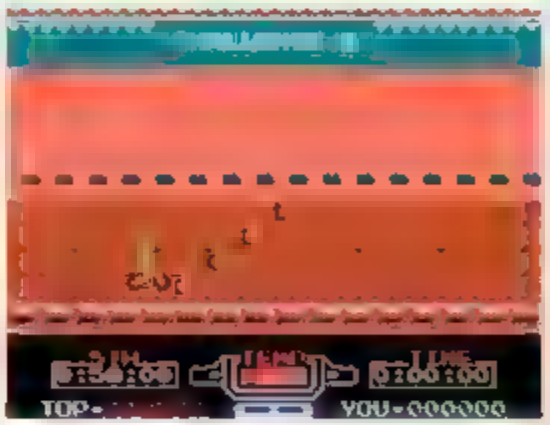




» AI SENSHI NICOL

■ DEVELOPER: KONAMI ■ YEAR: 1987

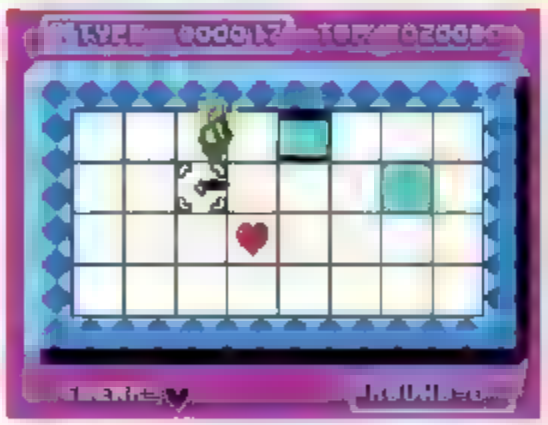
■ **Loosely translated as** *Love Warrior Nicol* this action title shares similarities with the top-down shooting segments taken from *Contra* – another game by Konami. The player is required to track down three diamonds on the game's seven eclectic stages, each of which is held by a different boss character. By collecting items of a futuristic space suit, the player can cross certain obstacles and avoid taking heavy damage. Strikingly attractive for an 8-bit title released in 1987, *Ai Senshi Nicol* has since been released on mobile phones in Japan but remains largely unknown in the West, despite its desirable status as a Konami action game.



» VS EXCITEBIKE

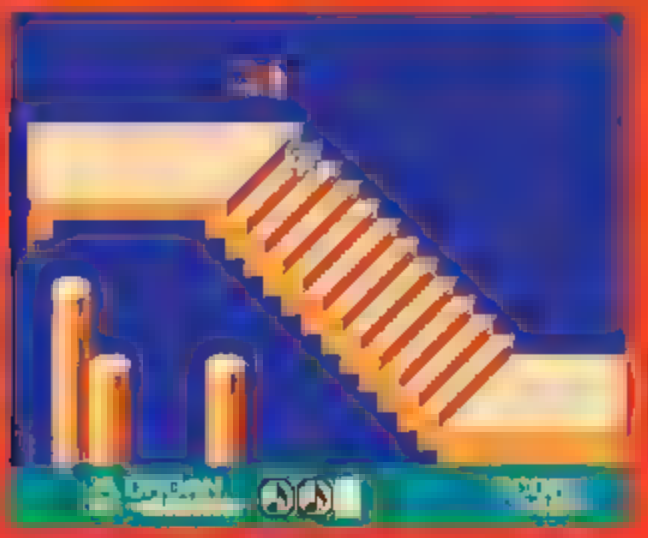
■ DEVELOPER: NINTENDO R&D1 ■ YEAR: 1986

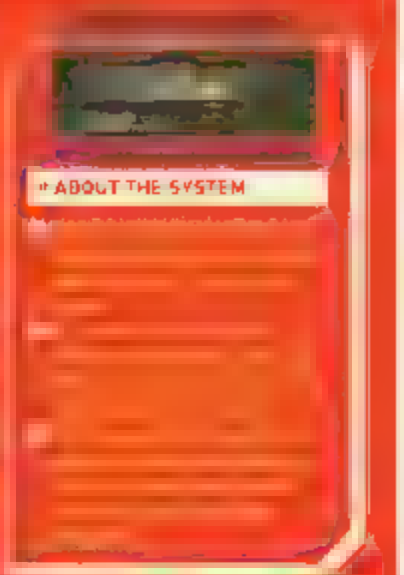
■ **Not to be** confused with the 1984 arcade version – which carried the same title – *Vs Excitebike* is notable for including a two-player mode which allows friendly competition between chums. Players can pick the track they wish to race on, the amount of rounds needed to decide the winner and the number of laps taken. Furthermore, user-generated tracks can be saved to the Famicom Disk System format thanks to the rewritable nature of the console's media. *Vs Excitebike* is arguably one of the best versions of the game, thanks to its two-player mode, and its customisable nature is well-suited to the console.



» KNIGHT MOVE

■ **Created by Alexey Pajitnov** – better known as the man behind *Tetris* – *Knight Move* is a puzzle title that is based around the L shape movement of a knight piece in a game of chess. The objective is to remove tile pieces from the board and the challenge lies in avoiding a nasty fall down a hole you've created. Exclusive to the console, *Knight Move* is collectable largely due to the legendary status of its creator. Not to be confused with Microsoft's 1995 Windows-based puzzler *Knight Moves*, which is based on the Famicom Disk System title but had no input from Pajitnov himself.





» KAETTE KITA MARIO BROS

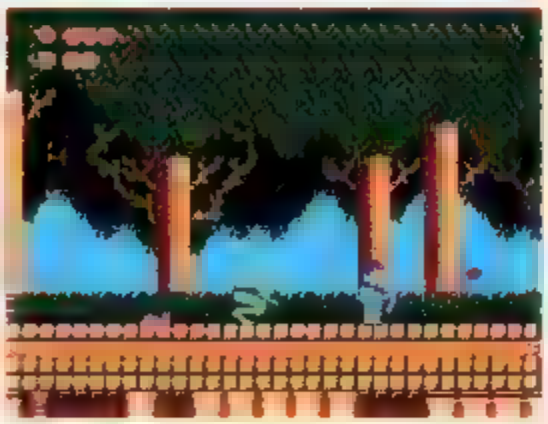
■ DEVELOPER: NINTENDO ■ YEAR: 1986

■ **Released in Japan** as part of a Famicom Disk Writer promotion – which allowed owners to write new titles on their existing disks – this enhanced port of *Mario Bros* showcases revised gameplay tightened controls, additional cut-scenes and the ability to save your score. Interestingly, *Mario Bros Classic* – a Euro-only cartridge release for Nintendo's 8-bit console – is based on this version, rather than the North American NES original, most likely down to the fact that it boasts better controls. Because it was only available via the Disk Writer, this is an incredibly rare title.

» BOMBERACLE BOKJITE UPA

■ DEVELOPER: HUDSON ■ YEAR: 1986

■ **An action platformer** with a baby as the lead character, *Bio Miracle Bokutte Upa* launched as a Famicom Disk System exclusive in 1988 but would later find its way to the standard Famicom in 1993. It was slated for release in the West, but Nintendo of America blocked the move. The game's lofty status ensured that it eventually arrived on the Wii Virtual Console in 2008, although it should be noted that this version is based on the cartridge edition, which lacks the additional audio channel present in the Famicom Disk System original. Cute and playable, this is a must-have purchase for the Disk System library.



» MONTY NO DOKI DOKIDA SASSOU

■ DEVELOPER: JALECO ■ YEAR: 1987

■ **Based on Gremlin's** *Monty On The Run*, *Monty No Doki Doki Daisassou* substitutes the main character for a human and transports the action from England to a collection of forgotten temples. Despite the changes and the obscure nature of the Japanese release, *Monty No Doki Doki Daisassou* remains an intriguing platformer and serves as an excellent example of how popular Western games can be altered to suit the tastes of Japanese audiences. Needless to say, a game about a mole escaping from the Miner's Strike may have been lost on Famicom owners on the other side of the world.

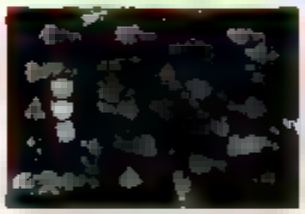
Minority Report

NAZO NO MURASAME JŌ

» HALLEY WARS

■ DEVELOPER: TAITO ■ YEAR: 1989

■ The sequel to the 1986 arcade game *Halley's Comet*, this vertically-scrolling shooter also saw release on the Sega Game Gear handheld. A highly entertaining blaster



» SUPER BOY ALLAN

■ DEVELOPER: ASMIK ■ YEAR: 1997

■ An educational action game that features equations and fractions, *Super Boy Allan*'s main character traverses a *Zelda*-like world in search of a cure for his beloved sister

» SHIN ONIGASHIMA

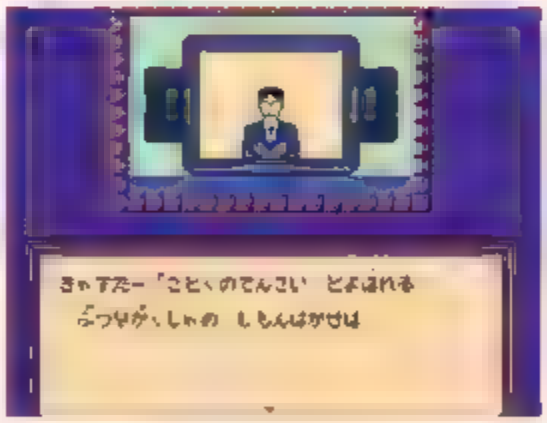
■ DEVELOPER: NINTENDO EAD / R&D1 ■ YEAR: 1987

■ ***Famicom Mukashi Banashi:*** *Shin Onigashima* – to give the game its full title – is actually two separate releases, both launched in Japan in September 1987. A text adventure at heart, *Shin Onigashima* was created by Nintendo EAD's Tatsuya Hishida, who not only wrote the story but designed the characters as well. It's one of the only games that makes use of the Famicom Disk System's ability to swap disks when switched on – the second disk won't actually run without the first. The sequel, *Famicom Mukashi Banashi: Yuuyuuki* would follow in 1989 and used the same two-disk mechanic.

» SUISHŌ NO DRAGON

■ DEVELOPER: SQUARE ■ YEAR: 1986

■ **Unique for its** time, this adventure title boasts an icon-driven interface and a point-and-click-style cursor which can be moved using the joypad to examine objects of interest. Anime-style cutscenes from Japanese studio Nippon Sunrise help bring the game to life, and the wacky sci-fi setting was ahead of its time for a 1986 RPG release. Interestingly, Square released *Suishō No Dragon* (roughly translated as *'The Quartz Dragon'*) under its DOG Disk Original Group, label, which was established especially to create Famicom Disk System titles – a sign of just how big publishers and developers expected the format to be when it was released.



» TIME TWIST REKISHI NO KATASUMI DE

■ DEVELOPER: NINTENDO EAD / R&D1 ■ YEAR: 1991

■ **Like *Shin Onigashima,*** *Time Twist: Rekishi No Katasumi De* was released on two disks, the first of which has to be completed before the second one can be used. The game features time travel as its core story concept, with the player going back in time to meet with famous figures such as Joan of Arc, Adolf Hitler, Alexander the Great and even Jesus Christ. Released in July 1991 – eight months after the launch of the Super Famicom – it was the final packaged Famicom Disk System title and has since become quite a collector's item.

FALSION

» DEEP DUNGEON

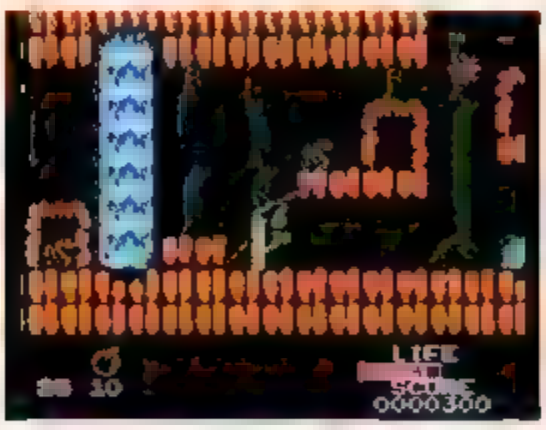
■ DEVELOPER: HUMMINGBIRDSOFT ■ YEAR: 1985

■ A first-person RPG similar to *Wizardry* and *Dungeon Master*, *Deep Dungeon* started an entire series that continues to be popular in Japan even today

» DORE MIKKO

■ DEVELOPER: KONAMI ■ YEAR: 1987

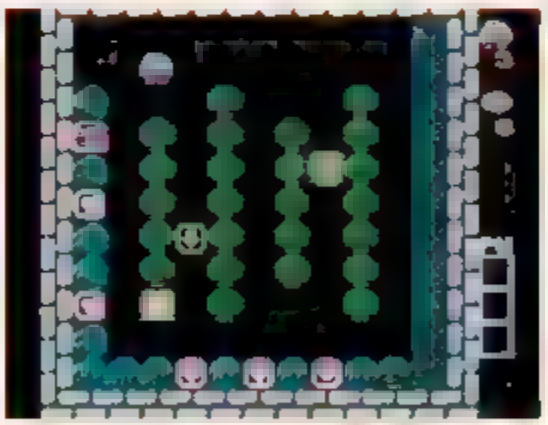
■ A music-creation game which shipped with a 36-button keyboard-style device for composing tunes. Yet another Konami exclusive that failed to make it out of Japan



» ARMANA NO KISEKI

■ DEVELOPER: KONAMI ■ YEAR: 1987

■ **Clearly inspired by** the famous *Indiana Jones* films, *Armana No Kiseki* – also known as *Miracle Of Armana* – is an action platformer that sees the main character exploring underground caverns in search of treasure. The game's grappling hook mechanic borrows heavily from an earlier Konami release called *Roc 'N Rope*, which launched in arcades in 1983. The impressive visuals, tight gameplay and excellent music (composed by Kinuyo Yamashita) all combine to make this one of the Famicom Disk System's more enjoyable action titles – it's a real shame it never made its way over to the standard Famicom and NES as a cartridge release



» EGGERLAND SOZOHE NO TAB DACHI

■ DEVELOPER: HAL LABORATORY ■ YEAR: 1986

■ **Part of the** same series which includes the NES classic *Adventures Of Lolo*, *Eggerland Sōzōhe No Tabidachi Eggerland Departure To Creation*) is a puzzle title set across 50 maps, many of which are recycled from the 1985 MSX prequel *Eggerland Mystery*. A construction mode allows you to create your own maps, and this level of customisation adds greatly to the game's longevity. A Game Boy entry appeared in 1994, but since 1996 instalments in the *Eggerland* series have remained exclusive to computers in Japan, with the last release – *Revival Eggerland* – seeing the light of day in 2001

» FAMICOM GRAND PRIX 3D HOT RALLY

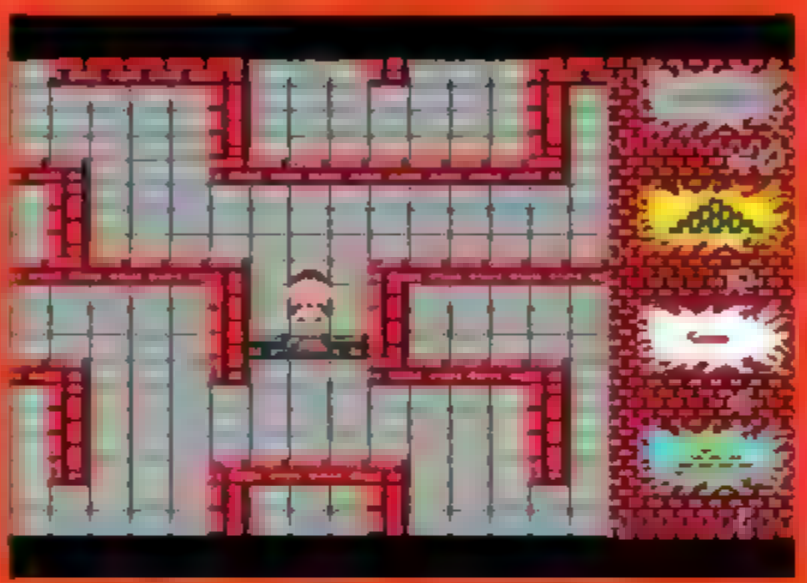
■ DEVELOPER: NINTENDO / HAL LABORATORY ■ YEAR: 1987

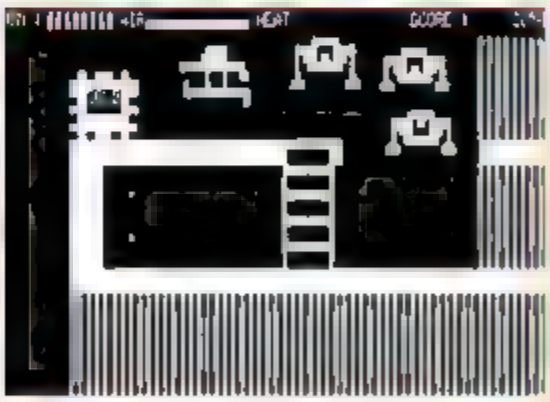
■ **The sequel to** *Famicom Grand Prix: F1 Race*, this title substitutes Formula One cars for dirt-loving rally vehicles. Mario and Luigi take starring roles, and the game is notable for making use of the Famicom 3D glasses to create an immersive 3D effect while racing. Like its forerunner *Famicom Grand Prix II* came with support for the Disk Fax, which allowed high scores to be posted directly to Nintendo – a primitive form of the online leaderboards we enjoy in modern games. Because of this, it came on a blue disk – the final Famicom Disk System title to do so

Minority Report

TRS-80 Color Computer

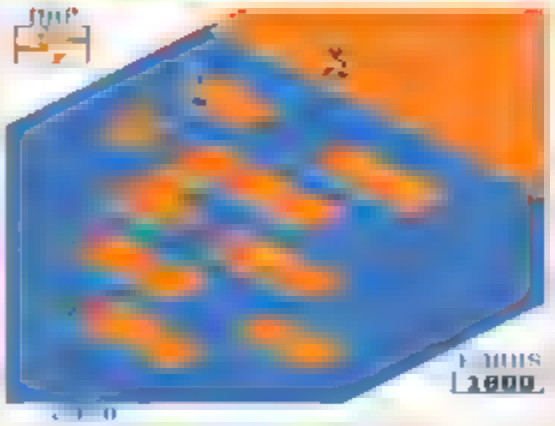
A MAZING WORLD OF MALCOLM MORTAR





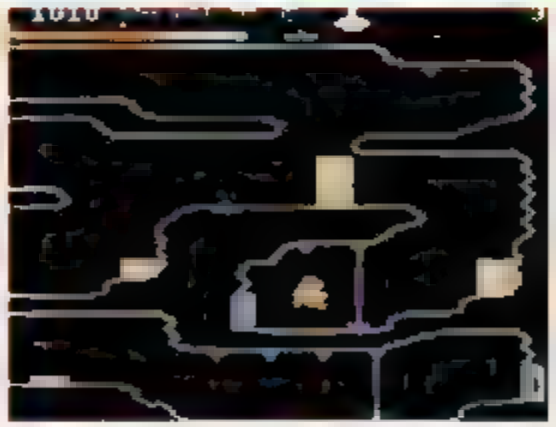
» VOLCANO HUNTER

■ **You can't say** *Volcano Hunter*'s developer David Smith doesn't provide fan-service. David sells *Volcano Hunter* t-shirts and even provides 3D printer plans for a keychain version of protagonist Hunting Harry. The continued interest in David's platformer is likely down to this late TRS-80 release offering deeper gameplay than the system's early fare. The goal is to retrieve a city's fuel supplies, which creatures called Druts have stolen. Since contact with Druts is fatal the frequent use of time-bombs is required, but the precarious gaps between this challenging game's platforms prove just as deadly.



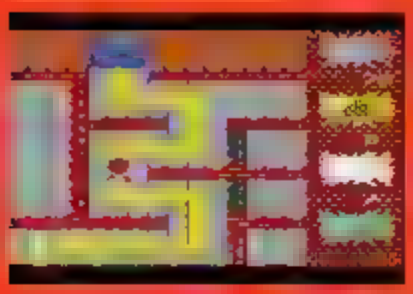
» GHANA BWANA

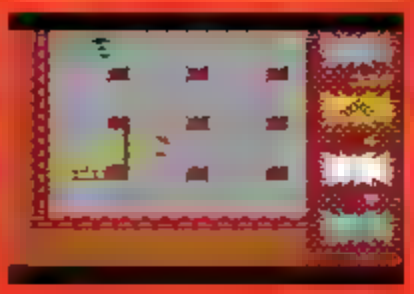
■ **If *Ghana Bwana*** brings to mind *Zaxxon* then there's a good reason for that – Steve Bjork previously developed the Color Computer version of the classic Sega shooter. The similarities between the two games are superficial though, with *Ghana Bwana* having a jungle rather than space setting and being more collect-em-up than shoot-'em-up. Specifically, you have to assemble maps to proceed through the game's six varied stages, which involve navigating shark-infested waters, platforming across swamplands and ascending sheer waterfalls while avoiding boulders



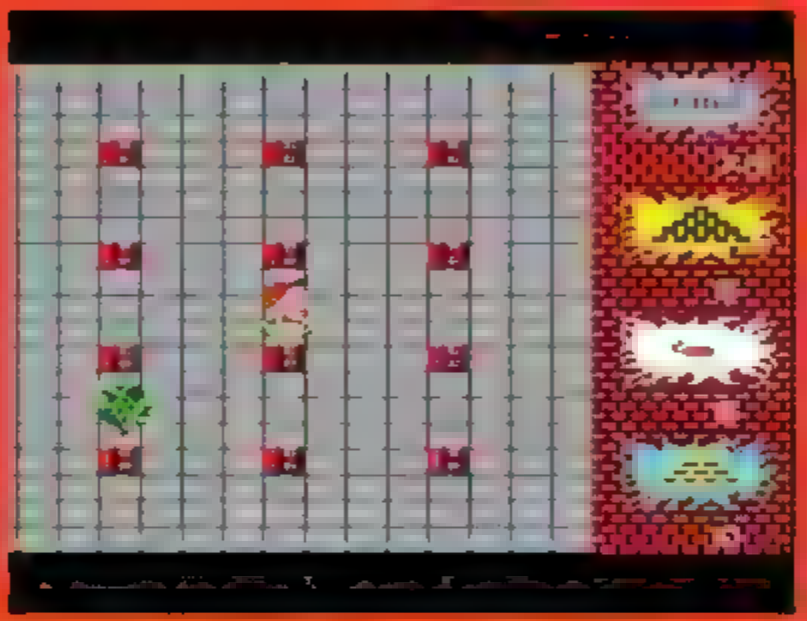
» CAVE WALKER

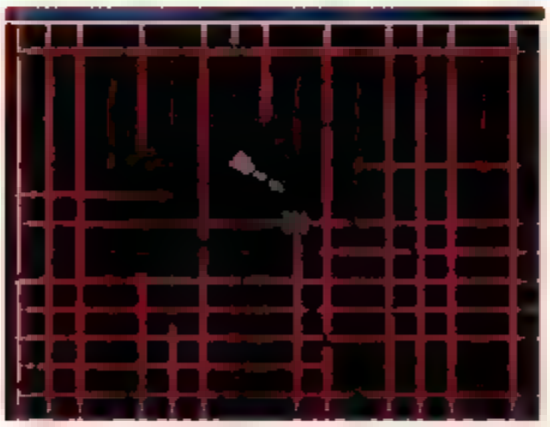
■ **The sequel to** *Downland* – an earlier flick-screen platformer – *Cave Walker* doesn't do anything radically different from its predecessor but is bigger and better. *Cave Walker* is still fairly intuitive, with the puzzles it sets more of a test of reflexes and timing than of lateral thinking. For example, locked doors require keys, energy levels can be raised by collecting bread and opening an umbrella turns a fall into a gentle descent. The hazards found in *Downland* return, with firepits, steam that shoots out of ceilings and a giant white bat all contributing memorable (if annoying) deaths to the proceedings





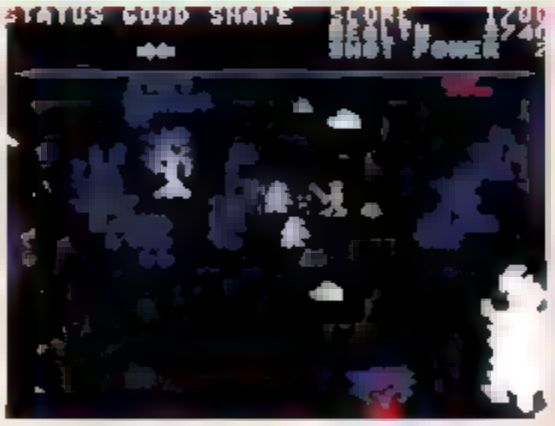
TRS-80 Color Computer photograph courtesy of Andreas Parmis





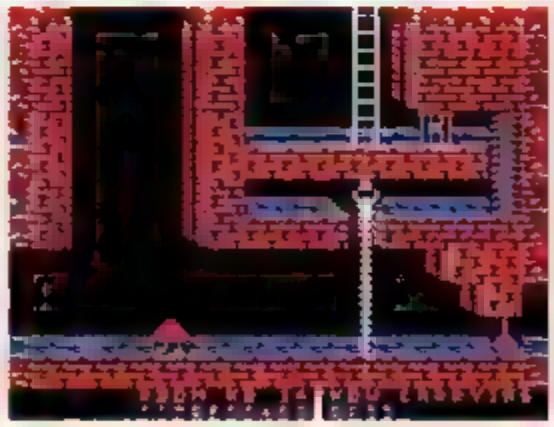
» SPIDERCIDE

Clearly Tim Swisher took some inspiration from *Asteroids* when designing *Spidercide*, but the game's title hints at how having taken the Atari shooter as a starting point Tim then developed totally divergent gameplay for his creation *Spidercide* features a ship much like the one in *Asteroids* It rotates left and right and moves forwards and backwards but in place of floating space debris are spiders with a variety of move-sets Your arachnid foes take a life on contact and spin deadly webs around your position If not shot down which take ages to perforate with laser-fire



» WIZARD'S DEN

Although essentially an arcade adventure, *Wizard's Den* does have RPG elements such as stats that record your character's health and abilities which are affected by the decisions you make and the actions you take The game takes place in a four-way scrolling isometric world where the aim is to find a magic gemstone Before doing so you have eight stages to clear each of which features monsters and potions, provisions and weaponry Where *Wizard's Den* shines is in combining three genres in such a way that the resultant gameplay still feels cohesive

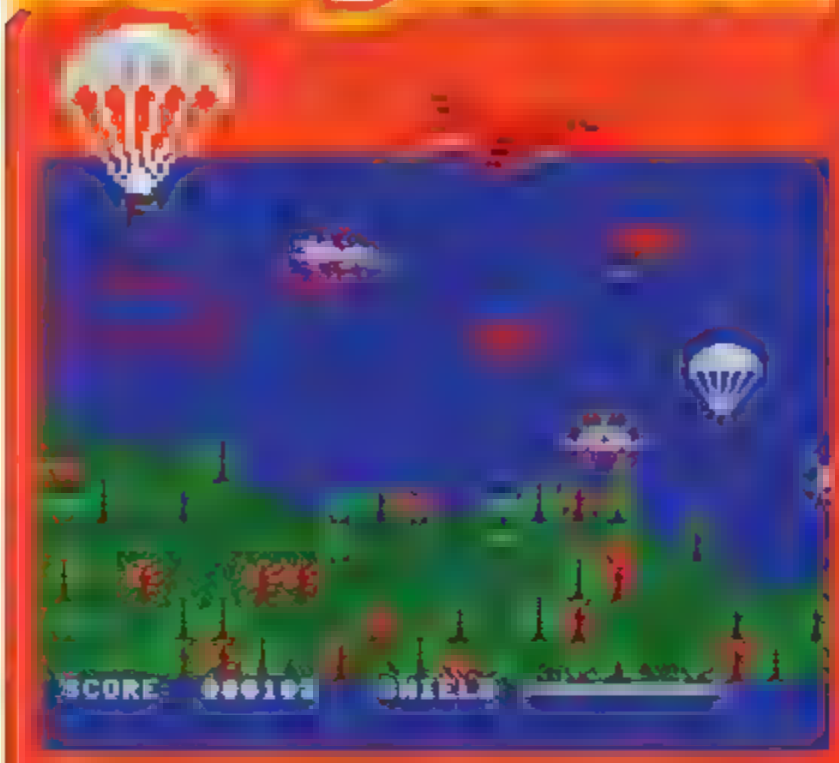


» DRAGON SLAYER

Solving the simple puzzles in *Dragon Slayer* is deeply satisfying perhaps because of the effort and lateral thinking involved in getting the right object to the right place in order to do so For example, you need a pair of boots to cross a rough area but the boots are at the bottom of a shaft so you need a rope. The rope is behind a locked door and its key is some distance away Which adds up to a lot of backtracking especially since you can only carry one object at a time and that's just the first level Perhaps it's just as well *Dragon Slayer*'s puzzles are simple.

Minority Report

CRYSTAL CITY



» VARIOC

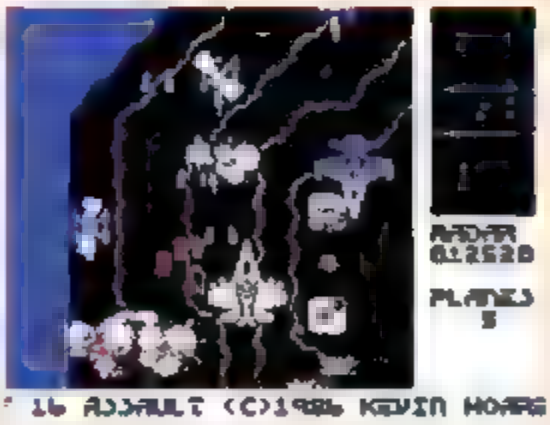
■ Although *Variloc* borrows the concepts behind the chess-like *Archon*, the post-move battles in Greg Zumwalt's tribute are far superior

» STELLAR DEFENCE

■ Steve Bjork took cues from *Defender* when making *Stellar Life Line*. This shooter sees you protecting a defenceless convey from meteors and aliens

» PHOTON

■ **A devious top-down** puzzler *Photon* applies a simple set of rules to a complex scenario. With the use of a cog-like avatar, your objective is to reach an exit without your power-bar being reduced to zero. Standing in your way are inanimate objects that can either be pulled or pushed – providing nothing obstructs their paths – and a variety of energy-zapping opponents. Coloured balls continually roll but can have their route altered by rearranging objects. More dangerous foes require containment. The key to *Photon* is to not let adversaries loose or reroute them to your disadvantage.



» F-16 ASSAULT

■ **Kevin Hoare worked** on several Color Computer titles – whether as coder, artist or both – with his output being especially notable for attractive visuals and polished presentation. *F-16 Assault* also plays well and provides some pretty tough top-down shoot-'em-up action. The game's title neatly explains your mission, but more specifically your goal is to undertake a bombing run in enemy territory. Opposition planes and helicopters that you fail to hit before they take off meet you in aerial combat where you have to shoot them down before they do the same to you.

»FEMBOT'S REVENGE

■ **The third in** ColorQuest's *Cimeson* series, *Fembot's Revenge* reuses the previous entry's 3D graphics engine but cleverly slots shoot-'em-up sequences into the trilogy's action/text adventure-based formula. The way the title's gameplay works is that basic actions like walking around are performed with a single key-press, but advanced activities involving interaction with your surroundings are handled by typing commands. *Fembot's Revenge* provides a first-person perspective of a space station built around a maze of tight corridors, which gives the title a tense, claustrophobic feel.

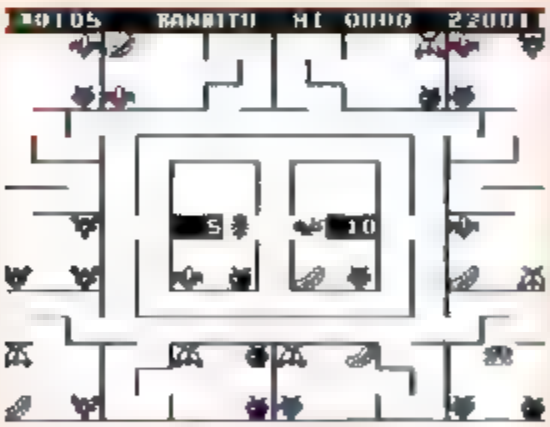
13 GHOSTS

» PEGASUS AND THE PHANTOM RIDERS

■ While clearly inspired by *Joust*, this builds on the coin-op's mechanics by adding faux-3D islands that you get nearer to each wave and additional hazards

» CANDY CO

■ The original premise behind *Candy Co* is to leap from one horizontally or vertically moving platform to another collecting candy and saving people



» EL BANDITO

■ **Although it offers** a one-player mode, *El Bandito* isn't much fun to play solo. It becomes obvious when played against someone else, however, that the game was intended to be a two-player experience. *El Bandito* sees you guide an ant around a top-down maze collecting food while avoiding spiders. You score points by getting far-off snacks home but carrying food slows you down enough that spiders can catch you so occasionally you have to drop your meal and run. This is typically when Player Two steals your lunch, but their reduced speed often sees the tables turned.

» SHOCK TROOPER

■ **Rather than split-second** reaction times, *Shock Trooper* demands careful timing and strategy to pass each of its stages. A key mechanic requires restrained usage of a rifle that is effective against force-fields and munitions but also gives off radiation, which you can only absorb so much of. The best approach to the game is to treat each screen like a puzzle where you work out the safest path through that level's dangers before dealing with them. Between this need for lateral thinking and its caution-inducing radiation mechanic, *Shock Trooper* becomes something more than a simple platformer.

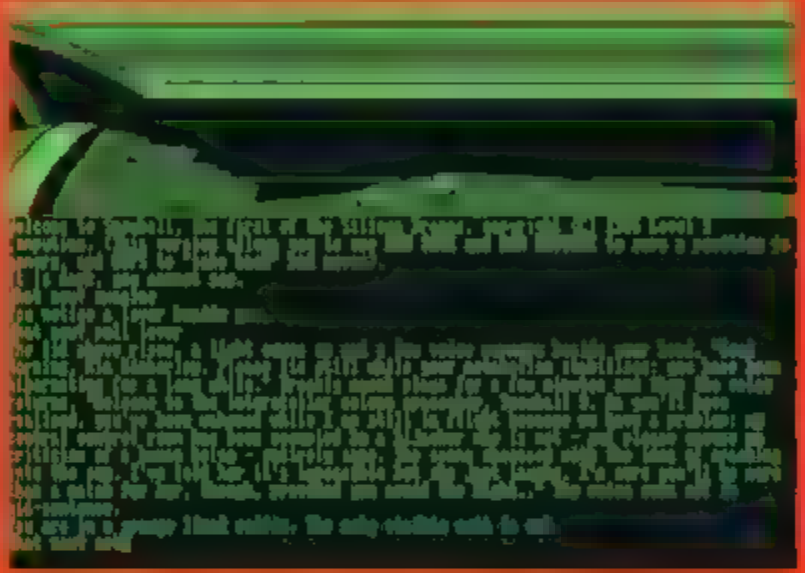
» TIME BANDIT

■ **Released during the** same year as *Dandy*, *Time Bandit* is another maze game populated with spawning opponents and portals that link levels together. To be fair, though, *Time Bandit* shares as many differences with Atari's classic dungeon crawler as it does similarities. Firstly, it involves time travel to fantasy, space and Wild West eras, and secondly, its play revolves around navigating tight spaces in search of keys to open a number of locks. Repeat visits to each era are required to complete the game, but each trip features slightly different mazes, which helps to keep things interesting.

Minority Report

SILICON DREAMS

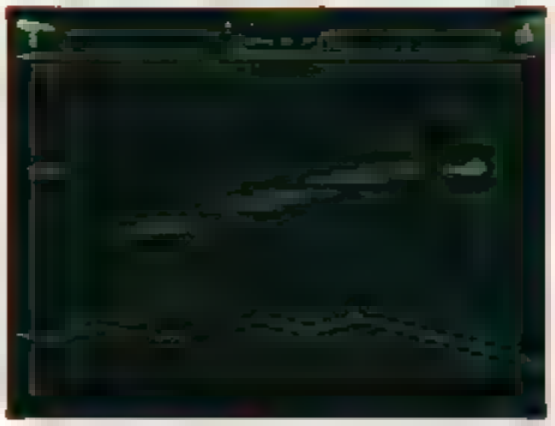
AMSTRAD PCW



» STARGLIDER

■ DEVELOPER: ARGONAUT ■ YEAR: 1987

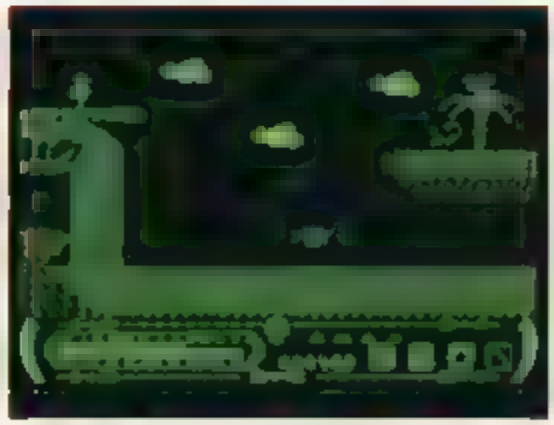
■ **The PCW was** pretty capable when it came to 3D vector-style games and titles like *Tau Ceti* and *Catch 23* were released for the machine. Best of the bunch was *Starglider* Jez San's 16-bit triumph that was masterfully converted to Z80 computers by Realtime Games. Content-wise the PCW release is similar to the CPC version with the various missions and neat additions like the rear-view scanner. It does benefit from the PCW's wider display, showing more of the space-warring action on-screen, but obviously lacks the quality AY sound from the CPC version. One nice touch is mouse support which most would agree is the preferred method of controlling the game.



» GUARDIAN

■ DEVELOPER: ALLIGATA ■ YEAR: 1994

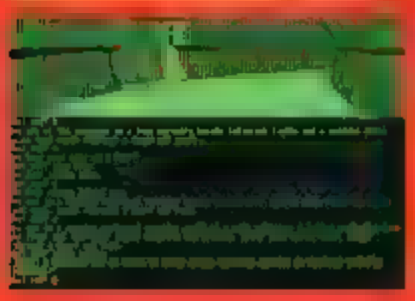
■ **Alligata's *Defender* clone** was released under several titles including *Guardian*, *Defend Or Die* and, rather cheekily, *Defender*. There aren't too many arcade games on the PCW so this was a welcome release. And it clearly benefits from the coin-op's very basic graphics, which are a perfect fit for the PCW. Lack of detail means that the game whizzes about as fast as it should and the frantic gameplay from the original is fully intact. *Guardian* is one of the best *Defender* clones available and the PCW version is great. *Alligata* also released a version of platform hit *Blagger* for the PCW that's also worth a look.

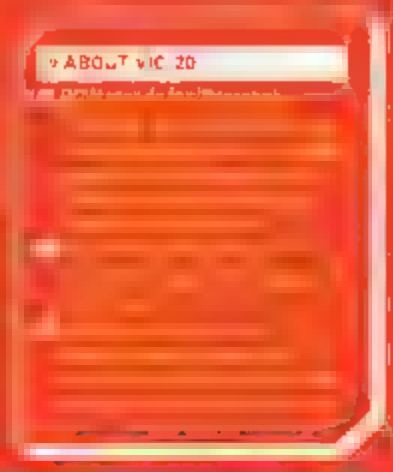


» LIVINGSTONE I PRESUME

■ DEVELOPER: OPERA SOFT ■ YEAR: 1987

■ **Despite being an** Opera Soft release, this title will be familiar to many as it was picked up and published outside of Spain by Alligata. It's a jungle-set platformer in which you play reporter Henry Stanley as he searches for the eponymous missionary. The game is famously difficult, and the lack of colour on the PCW doesn't help, but this is one of those titles where you want to progress just to see what oddities lie deeper within the jungle. And any game that invites you to float downstream on a log, over waterfalls, has to be recommended. The sequel also arrived on the PCW and while it was twice the size it was only half as enjoyable.

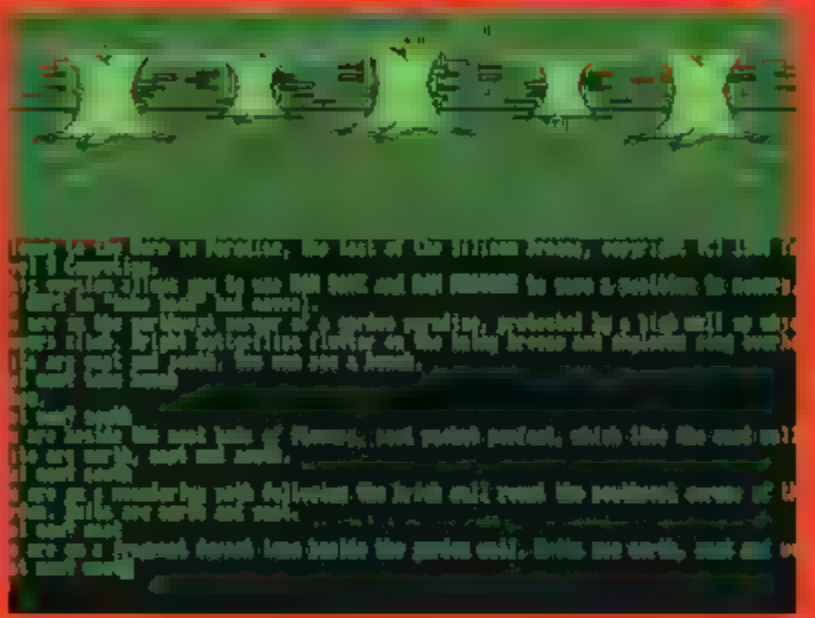




explore the cavernous ship, evade deadly droids, negotiate a typically maddening maze and ultimately correct the Snowball's course. In *Return To Eden*, you find yourself on the colonised planet and once again have to save the Snowball, this time from the planet's robotic inhabitants who believe the orbiting ship to be hostile. The final game, *The Worm In Paradise*, takes place decades later when Eden has been fully colonised. You play a citizen who must uncover what's really going on behind a Utopian facade.

The series becomes more sophisticated with each entry, both in terms of challenge and tone (witness the allegory in *Worm*). As such, *Silicon Dreams* is a collection that will appeal to a wide range of players, from novice adventurers to expert quest-heads. It's great value too—three great games for little more than the price of one is hardly a puzzle that needs solving. Throw in the CPC version (which is included on the same disk) and an accompanying 42-page novella, and you've got an extremely generous release.

The Amstrad PCW was designed for processing text so it's hardly surprising that interactive fiction is so readily available on the computer. Many other Level 9 titles were released, up to and including its final release *Scapeghost*. Fellow Brit adventurer Magnetic Scrolls published *The Pawn* and other titles on the PCW, while American masters Infocom ported most of its catalogue to the machine. If you were tackling some writing chore on your PCW then a good text adventure could provide perfect respite. That dormant cursor would become imbued with life, inviting you to enter verb-noun combinations that would transport you from the home office to far-off lands and new worlds.



» TROGLO

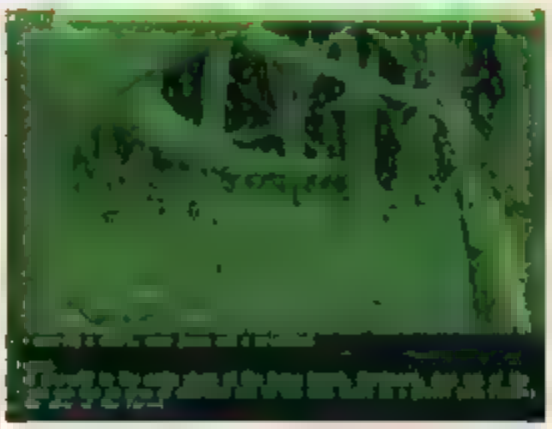
■ DEVELOPER: ACE SOFTWARE ■ YEAR: 1986

■ **It's Sega's *Pengo*** on the PCW, only with a little cave dweller replacing the plucky penguin from the arcade game. Everything else is pretty much the same: you slide the blocks to try and squish the blobs that are out to get you. Points are awarded on how quickly you clear the screen and you receive a bonus score for bringing together the three diamond blocks on each stage. This was an early PCW game so it's far from slick: the graphics are prone to flickering and the enemy AI is lacking, but the arcade gameplay is hard to beat. If you were a PCW owner looking for a score attack game then *Troglo* was more than fit for purpose.

» CORSARIOS

■ DEVELOPER: OPERA SOFT ■ YEAR: 1989

■ **This typically quirky** brew from Opera Soft is part beat-'em-up, part platformer. You play a pirate who's out to get the girl and the first part sees you busting out of jail and brawling with the ragtag locals. Two or three will surround you at a time and it's a case of punching your way out. Despite being able to wield various weapons it's far too difficult for its own good. Thankfully, you can choose to play the second part—the platforming section—without entering a password. Here, you're on-board the enemy ship and you have to climb each of the masts and lower the pirate flags in order to save the girl. It makes little sense but it's fun nonetheless.



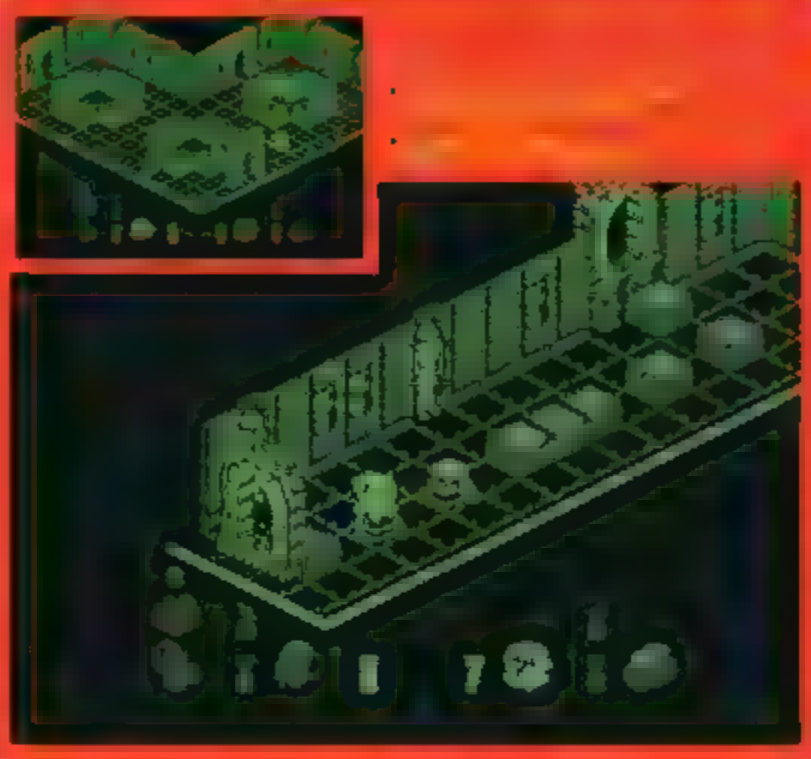
» THE PAWN

■ DEVELOPER: MAGNETIC SCROLLS ■ YEAR: 1987

■ **This strong debut** from Magnetic Scrolls made a very agreeable appearance on the PCW. Mixing solid adventuring with a wicked sense of humour, and possessing a clever, multiple-command parser, it's not hard to see why this is regarded as a classic work of interactive fiction. The PCW version is almost identical to the CPC version, with the chief difference being the monochrome graphics. The game is famed for its vivid illustrations so it's slightly disappointing to see a lot of the detail lost. You also have to wait while the pictures are dragged from disk. Still, you can turn the images off and enjoy this fantastic slice of fantasy.

Minority Report

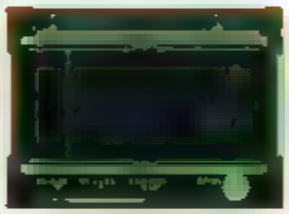
HEAD OVER HEELS



» STEVE DAVIS SNOOKER

■ DEVELOPER: CDS SOFTWARE ■ YEAR: 1987

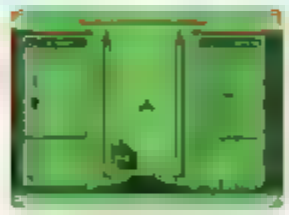
■ Three games for the price of one here, as unlike the other versions, the PCW release includes snooker, pool and billiards. It all works well despite the monochrome display.

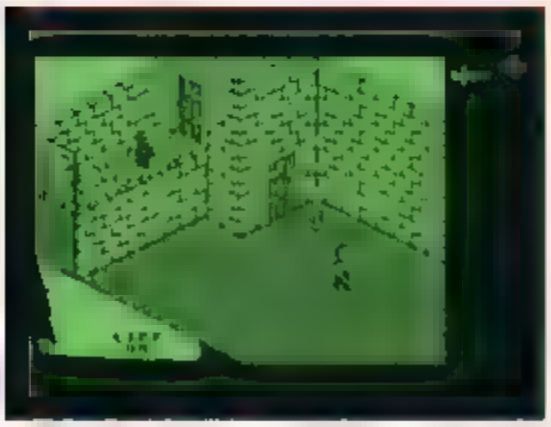


» TETRIS

■ DEVELOPER: MIRRORSOFT ■ YEAR: 1988

■ Every computer needs a version of *Tetris* and the PCW received the official release from Mirrorsoft. No frills, but then it is *Tetris* – falling blocks, plain and perfectly simple.

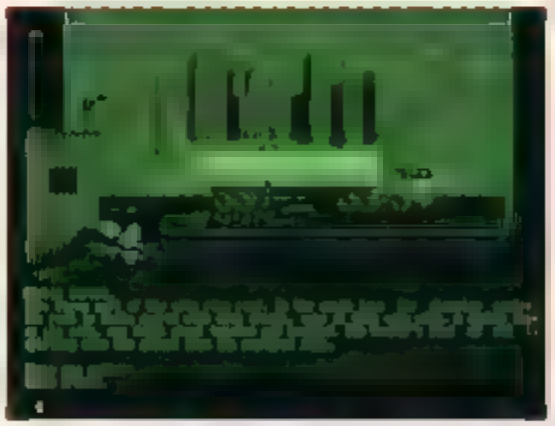




» FAIRLIGHT

■ DEVELOPER: THE EDGE ■ YEAR: 1985

■ **Jon Ritman's brace** of *Batman* and *Head Over Heels* would surely be the titles to go for if you were looking for an isometric adventure on the PCW, but there was definitely room for *Fairlight* on the machine. While indebted to ultimate's filmation games, it doesn't follow the template as closely as others. The castle setting is very well done and there are very few similar-looking screens. There are some good puzzles too, and lots of nice touches like the guards who disappear under their helmets when hit. The Edge revealed that the PCW version sold surprisingly well, prompting it to also release *Fairlight II* on the machine.



» AFTER SHOCK

■ DEVELOPER: INTERCEPTOR SOFTWARE ■ YEAR: 1987

■ **Games set in** bleak wastelands have been done to death over the years, but when *After Shock* arrived and invited players to explore a city torn apart by an earthquake it felt both fresh and chilling. The game is mainly text only, but it does feature a number of images depicting the devastation. These screens benefit from having been specially drawn for the PCW rather than copied from other versions. The game does suffer from some maddening idiosyncrasies (the 'get' command is not recognised, for example), and solutions are often very specific ('lubricate mechanism' to fix a rusty lock, anyone?), but this is a thrilling adventure.

» MATCH DAY

■ DEVELOPER: OCEAN ■ YEAR: 1987

■ **There aren't many** sports titles on the PCW and the ones that are don't deserve much of a mention. *Match Day* is the exception, and you imagine that's largely because creator Jon Ritman handled the conversion himself rather than farming it out. It also helps that Jon ported the CPC version, which was already designed to be playable on a monochrome monitor, so you can tell the two teams apart. On its release this was probably the best football game available, in that it was more accurate than most with loads of options to tweak, while still a lot of fun to play, particularly against a friend. It was top of the league and back of the net, as cliché dictates.

THE LAST MISSION

» LAST NINJA

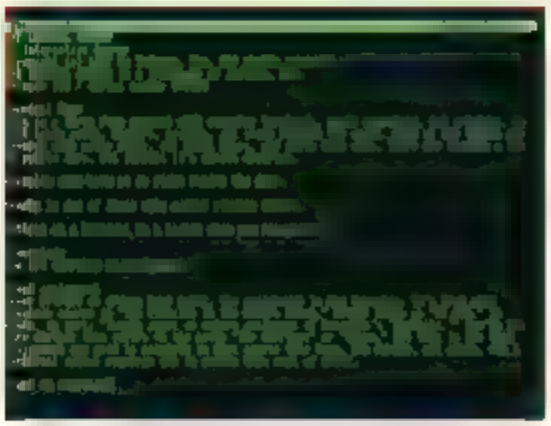
■ DEVELOPER: SYSTEM 3 ■ YEAR: 1988

■ The best of the *Last Ninja* games made its way to the PCW courtesy of Mev Dinc. Fiddly controls cannot detract from this isometric adventure that deserves its classic status.

» CLASSES

■ DEVELOPER: OPERA SOFT ■ YEAR: 1990

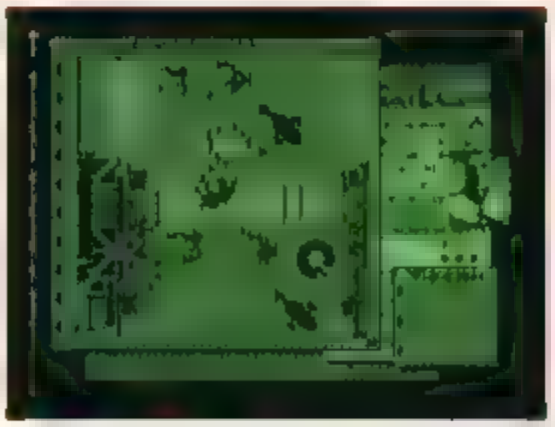
■ Another bonkers effort from Opera Soft. This one's a bit like arcade game *Rastan*, with you running along smashing mythical beasts to bits. Ridiculously tough but never boring.



» THE LURKING HORROR

■ DEVELOPER: INFOCOM ■ YEAR: 1987

■ **Infocom was the** most prolific publisher on the PCW, with many of its adventure games available for the machine. Some classics are missing, but the firm's most famous titles were released including *Enchanter*, *The Hitchhiker's Guide To The Galaxy*, the original *Zork* trilogy and this, *The Lurking Horror*, one of the best horror games ever made. You play a college kid who visits the campus computer lab during a snowstorm to finish off an assignment. During the night, as the storm builds outside, something evil stirs beneath the building. Like the best scary stories, this Lovecraft-inspired tale is fun and frightening in equal measure.



» SOVIET

■ DEVELOPER: OPERA SOFT ■ YEAR: 1990

■ **When the PCW** was being designed, Amstrad's boffins in Brentwood would have never imagined software like this running on their hardware. It was, after all, designed for office applications not scrolling shooters like *Soviet*. The game employs a top-down view and plays like a *Grand Theft Auto* prototype, with buildings made up of layers that shift as the viewpoint moves (a clever trick that's very similar to the top-down stages in Sega's *Thunderblade*). You drive around the streets, shooting enemy vehicles while attempting to rescue civilians. The gameplay is all over the place but it serves as a fine example of what's possible on the PCW.

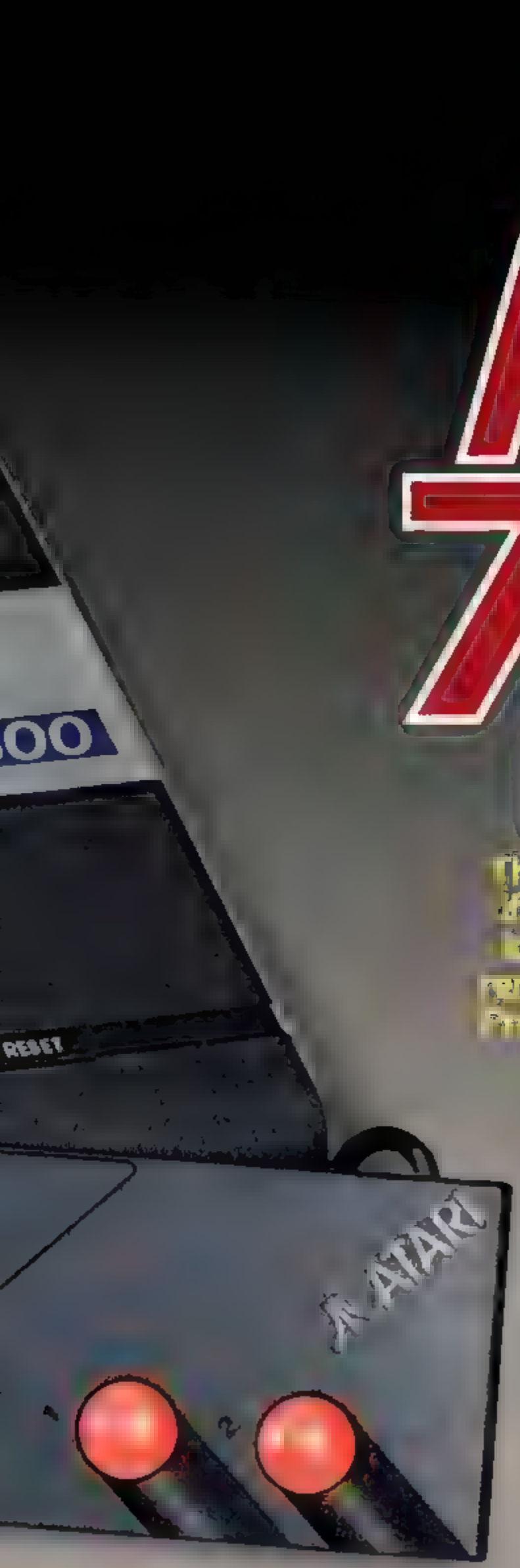
» LA ABADIA DEL CRIMEN

■ DEVELOPER: HABISOFT ■ YEAR: 2012

■ **Opera Soft released** loads of games on the PCW, so it's really odd that its finest title, the murder mystery *La Abadia Del Crimen* (The Abbey Of Crime), never appeared on the platform. Or at least it didn't back in the day, because the game has since been ported from the CPC to the PCW by homebrewer Habisoft. This sterling effort shows that the game works really well on the PCW, with the graphics leaping off the screen and bringing the abbey to life. Ideally you need to convert the game to disk and play on a proper PCW, although it's definitely worth a look on PC using the PCW emulator CP/M Box (also by Habisoft).

“The sprite handling was very impressive for the time. It can handle a ton of on-screen objects without any flicker”

Perry Thuente



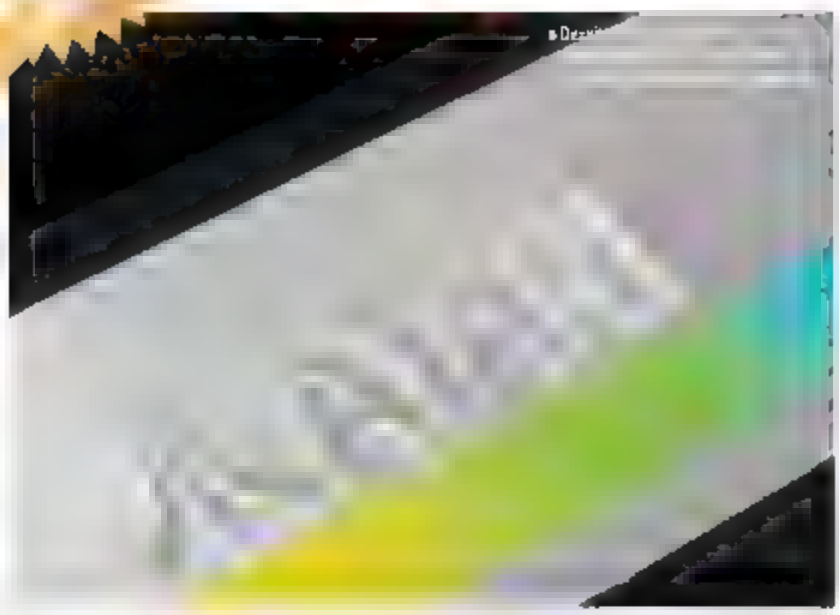
ATARI 7800 PROSYSTEM

The Atari 7800 has to be the biggest what if in the history of console gaming. From its turbulent early years to its homebrew renaissance, we decided to find out why the ProSystem is still relevant after 30 years

In 1984 the console market in North America was in complete disarray, the US had suffered the infamous videogame crash with companies going out of business left right and centre. Even the industry's biggest player Atari, had been left battered, bloodied and bruised. It had lost over $500 million and the failure of its newest console the Atari 5200, had done nothing to help matters. It needed to come up with something fast if it was to turn round its fortunes and for the first time in the company's history this help came from outside, in the form of the General Computer Corporation (GCC).

A few years earlier Atari had taken the fledgling company – started in 1981 by Doug Macrae, John Tylko and Kevin Curran – to court for making illegal mod-kits for a number of its arcade games. This lawsuit actually resulted in GCC working for Atari – it had clearly seen GCC's talent and soon had it developing arcade games such as *Food Fight* and *Quantum*, as well as converting a number of other coin-ops to both the 2600 and 5200 consoles. Atari was really impressed with GCC's ability to not only turn out games quicker than everyone else but also deliver high-quality titles too, in fact Warner had nicknamed GCC "The Toaster" because of the way it was able to just pop games out.

Warner had been looking at ways to revive Atari's fortunes and GCC looked like it might be able to provide the answer. Many projects had been looked at and considered, including the console that would become the Nintendo Entertainment System, but more on that later. Warner had also been conducting surveys to find out exactly what gamers wanted from a console. One of the key messages it got from the public was that they wanted to be able to play their old games on their new system. So GCC proposed a new ▶



▶ console to Warner that would not only provide powerful hardware capable of playing the latest games, it would also play all your old 2600 games. Atari even planned to make adapters to make your 5200 compatible with this new console too, so as not to abandon the users of its current machine. It seemed like the perfect plan.

Initially codenamed the 3600, the ProSystem would quickly become the sole focus of Atari. This upset a few people at Atari who were a bit miffed at Warner going outside of the company to find a new hardware solution. Art Ng, Steve Golson and several of GCC's chip architect designers, with assistance from MLS, would architect and design a revolutionary new graphics chip called MARIA. This name was chosen because the key custom chip in the 2600 was called TIA, thus completing the name of the popular liqueur Tia Maria. The MARIA would be the heart of the Atari 7800 ProSystem and the very first version of this chip was numbered GCC-1701 because GCC's engineers were big fans of *Star Trek*, the Starship Enterprise being NCC-1701. The only real flaw of the design was that that it didn't include a new sound chip, relying on the old 2600 TIA chip to produce two-channel sound. It was intended that POKEY chips, or a new low-cost sound chip called GUMBY, could be added to cartridges as an alternative option.

The finished console, now known as the Atari 7800 ProSystem, was announced in May 1984 with machines shipping to stores for a test market release the month after. This would see it compete head to head with the similar test market for the Nintendo Entertainment System, the console Atari had turned down in favour of the 7800. A move that would prove extremely costly for the company.

13 games were announced for the system's launch, many of which were conversions of popular arcade games of the time. The press reaction to the 7800 was very positive too, seeing it as a much better bet than the NES. The console was praised for its backwards compatibility, high-quality graphics, sleek design, a return to standard controllers, after the much-maligned 5200 analogue sticks, and for the inclusion of a BIOS that required a digital signature to be included in each game. This was specifically included to stop one of the key contributors to the North American videogame crash – unlicensed third-party software. Atari had big plans for the 7800, as well as announcing a stream of games it also planned to release a high score cartridge for saving your performance, a keyboard to turn it into a fully-fledged computer and even a Laser Disc player that could be hooked up to the expansion port.

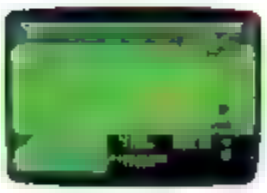
Unfortunately for both the 7800 and the gaming public Atari's situation had worsened and Warner decided it wanted shot of the company. Atari was up for sale to the highest bidder and this would bring with it some very complicated issues for the new console. Eventually the consumer division of Atari was purchased by the Tramiels and the new Atari Corporation, as it was known, wanted to re-launch the 7800 across the whole of the US and

"The way it was explained to me was that sports games were popular, ninjas were popular, so Ninja Golf. One can not help but be in awe of the thought process!"

David Dentt

TOP 5 EXCLUSIVES

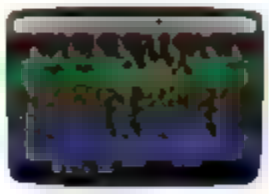
Classic games you can't get anywhere else



NINJA GOLF

■ ATARI ■ 1989

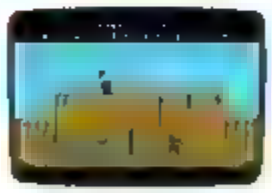
The 7800's killer app, *Ninja Golf* is possibly the most mental idea for a game ever – a scrolling beat-'em-up where you also have to play golf! Believe it or not the concept works really well, and the graphics and sound are particularly impressive, especially the *Shinobi*-esque boss fights as you reach the green. If you need to find a reason to own an Atari 7800 then *Ninja Golf* is most certainly it.



MIDNIGHT MUTANTS

■ ATARI ■ 1990

Starring Grandpa from the cult TV show *The Munsters*, *Midnight Mutants* was one of the last games released for the 7800 and really shows that machine can more than hold its own with the NES and Master System. This isometric arcade adventure has a spooky Hallowe'en-based plot, which is told by an impressive animated intro, and a huge map that will have you playing right into the midnight hours.



SCRAPYARD DOG

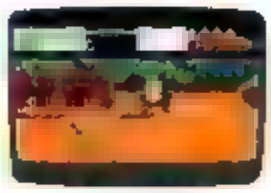
■ ATARI ■ 1990

We are cheating a bit here as this game also appeared on the Atari Lynx, but there enough differences between the games to make this inclusion warranted. *Scrapyard Dog* is clearly inspired by *Super Mario Bros.* a fact that becomes obvious as soon as you start playing it. It's an extremely solid platformer perhaps the best on the machine, but it lacks the honed controls and the well-crafted level design of the game it's trying to emulate.

MELTDOWN

■ ATARI ■ 1990

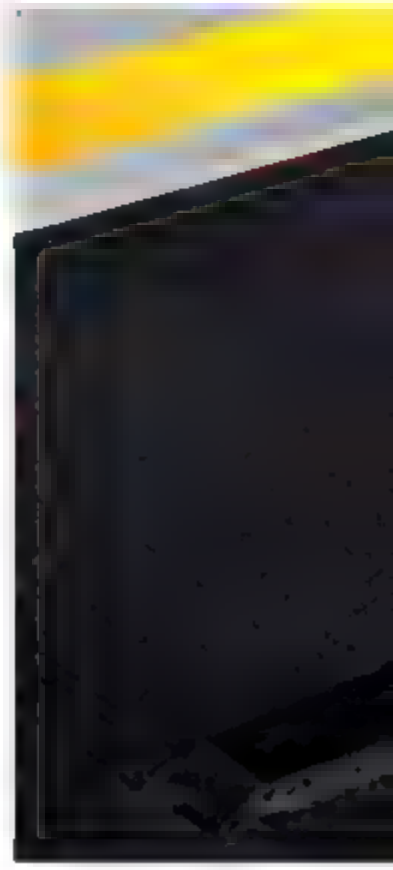
The 7800 lightgun might be hard to track down these days but it's well worth buying as some of the system's best games take advantage of it, including this underrated beauty. *Meltdown* might not look like much but the frantic shooting action will leave you sweating. The password feature is also an excellent edition, meaning you can return to where you left off. Don't underestimate this excellent title.



ALIEN BRIGADE

■ ATARI ■ 1990

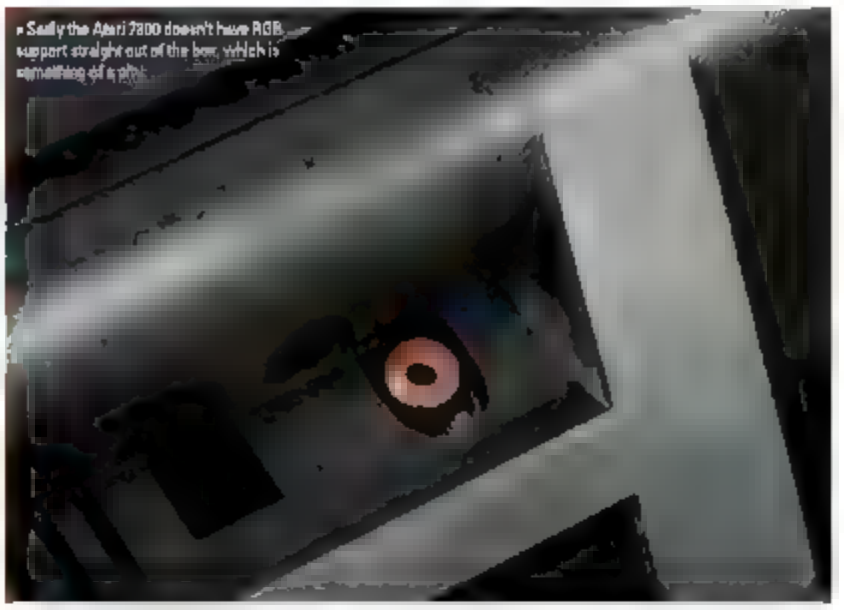
Another superb lightgun game for the 7800, *Alien Brigade* is basically *Operation Wolf* crossed with aliens. In fact one look at the screenshots will show more than a passing resemblance to the Taito gun game and the gameplay is just as similar. It's your mission to grab your XG-1 light gun and try to stop the alien invasion. *Alien Brigade* also features some rather swanky visuals too, making it well worth seeking out.



7800 VS NES VS SMS

How Atari's console and its competitors compared

	ATARI SALLY 6502C @1.79 MHZ	RICOH 2A03 (6502 CORE) @1.79 MHZ	ZILOG Z80 @4MHZ
PROCESSOR			
MEMORY	4K RAM, 4K ROM	2K RAM, 2K VRAM	8K
COLOURS	25	25	52
PALETTE	256	52	256
SPRITES	30+ PER LINE	8 PER LINE	16
RESOLUTION	320x240	256X224	259X192
SOUND	2 CHANNEL MONO	5 CHANNEL MONO	3 CHANNEL MONO



» Sadly the Atari 7800 doesn't have RGB support straight out of the box, which is something of a pity.

go head to head with the NES and upcoming Sega Master System. The big problem was that GCC still hadn't been paid, and this caused a lengthy argument between Warner and the Tramiels over who should actually pay. Eventually Jack Tramiel handed over the cash to purchase the rights for the ProSystem from GCC, but then even more negotiations ensued to provide the software he desperately needed. Over a year after the initial purchase, Atari Corp had finally settled all matters regarding the 7800 and was ready to go into production with a full re-launch. Unfortunately for Atari the market for this new console wasn't what it was back in 1984. Not only had Nintendo swept in and aggressively taken hold of Atari's own marketplace, another new player from Japan was also set to enter the market. Sega with its Master System. The console market had been well and truly revived and Atari had a lot of ground to make up if its console was going to be the success story everybody had predicted at its original launch.

Due to Atari Corp's limited finances the 7800 was re-launched with limited advertising, a trickle of games, many of which now looked extremely dated, and very little investment into creating new ones. Atari also cancelled all the planned peripherals and removed the expansion port in order to save money. This wasn't helped by Nintendo's new stranglehold on the market that had seen it block retailers from selling rival consoles, stop publishers making games for anything but the NES and spending big to tie up all the hottest licences. Despite Atari's lack of promotion and unwillingness to spend money supporting the 7800 it performed well in the marketplace, admittedly it was crushed by the NES juggernaut but did relatively well in a very distant second place. While the North American sales figure of 3.77 million (plus what was sold in the original test launch) pales in comparison to the 34 million Nintendo consoles it stands up well against the Master System, which sold less than 2 million in the US. So why wasn't it more successful? David Dentt, creator of *Ninja Golf*, offered the following insight. "There was a second-hand sense I got at the time that people believed it was doomed from the start. In the end, even if everything had been done perfectly, the 7800 never really had a chance because of *Mario*. Especially with the synergy between home and arcade. During my time on *Ninja Golf*, I was still working part time in an arcade. People would learn things playing *Mario* at home, and then come play the arcade version to show off. A good deal for Nintendo. ▶

» A computer module was planned for the 7800 that included a professional keyboard.

» Like the Master System, the Atari 7800 had a pause button, making lengthy sessions far easier to manage.

▶ The controller of the Atari 7800 looks very similar to the one found on the Nintendo Entertainment System

▶ Just what the 7800 needed, but you can't just come up with a killer game at will.

Initially there were no plans to release the 7800 in Europe, Atari decided to go with the XE Games System instead because this part of the world was dominated by home micros. That all changed when the popular UK magazine *Computer & Video Games* posted a public begging letter to Atari asking for the machine to be released in Europe. Penned by Tony Takoushi in his Hot Gossip section it saw the writer wax lyrical about the 7800 after having picked one up from the US. He bemoaned Atari's decision to go with the XE range and drooled over the 7800's graphical capabilities and ability to mimic popular arcade games. He also compared it to the rival NES and Master System, where he complained about the prices of the Sega and Nintendo products. Atari listened and a change of heart saw the PAL 7800 make its debut in 1987 with a new faceplate and simplified name. The 7800 went on to sell well in the UK and Europe and in a 1990 issue of *Raze* magazine it was reported that Atari currently had a 50 per cent share of the console market in the UK, taken from an independent Mintel report this was not to be sniffed at. We asked Atari UK marketing manager Darryl Still about the machine's performance, keen to know if it was as poorly placed in the market as many thought. "It was very well stocked by European retail," he reveals. "Although it never got the consumer traction that the 2600 did. I remember we used to sell a lot of units through mail order catalogues and in the less affluent areas."

So the question has to be asked about what the 7800 was like for the people who worked on it? Despite Atari not crediting people for their work on 7800 games, we managed to track down some people with first-hand experience of the console. David Dentt is particularly notable as he was the programmer and designer of the console's 'killer app' – the seemingly ridiculous but ultimately brilliant *Ninja Golf*. The first question we had to ask him was just how he came up with the original concept.

"The idea actually came from someone at Atari," he explains. "The way it was explained to me was that sports games were popular, ninjas were popular, so *Ninja Golf*. One can not help but be in awe of the thought process." Wanting to know more we asked

AN INTERVIEW WITH CURT VENDEL

The curator of the Atari Museum discusses the 7800 XM

What prompted you to start developing the 7800 XM?

Can you tell us more about your vision for the project?

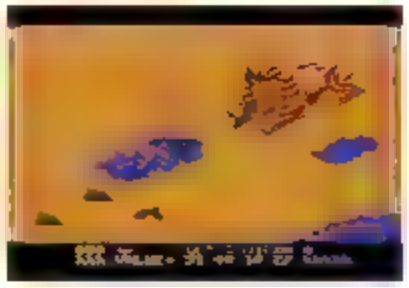
How do you feel about how Atari handled the 7800?

What are the main strengths and weaknesses of the 7800 as a system?

[Atari 7800] Curt Vendel released small manufactured reproductions of the planned 7800 High Score Cartridge.

Atari's console features a universal port, meaning you can pick other controllers in it if you so wish to.

▶ [Atari 7800] *Bentley Bear's Crystal Quest* is the game that everyone has been waiting for



▶ [Atari 7800] *Desert Falcon* is one of the most technically impressive games on the 7800

"It was like stepping out of prison to go to this from the Atari XE. I was able to do some really great things with the 7800"

Chuck Peavey

him about how much of his own design went into the game. "Quite a bit actually. After being given the basic idea, we came up with most of it as we went along. There were two programmers, myself and the guy who did the XE version, and an artist. We would just sit around and throw ideas around. We also got some feedback from Atari." David also programmed the 7800 conversion of *Klax* and he remembers the 7800 being great to work with on a technical level, providing some info on how he made *Ninja Golf*'s impressive visuals. "I remember that there were a limited number of colours available at any one time for display. So the game split the screen up into sections, and used different palettes for each section. This allowed more colours at a time on the screen as a whole, although any one section lived within its limits, this was very easy to do."

Chuck Peavey was the programmer of *Chuck Norris: Missing in Action* for TNT Games and was also impressed by the 7800's MARIA graphics chip. "If you look at *Missing in Action*, you'll see there are a lot of colours. There was so much to work with. For example the waterfall in *MIA* was really cool because we cycled the colours to make it look like it was flowing. I do remember it was super easy to write levels and players. It was like stepping out of prison to go to this from the Atari XE. I was able to do some really great things with the 7800. In fact, it was one of my favourite platforms to work on." Then Chuck laughs as he recalls his time with the 7800 and remembers an interesting story, one that he asks us to heavily edit in case he gets into trouble. "At the same time I was doing *Missing In Action*, Peter Adams was doing a game called *Grandpa's Attic* starring Grandpa from the TV show *The Munsters*. Peter insisted on doing his own graphics, something I'd given up on before I ever started coding professionally. *Grandpa's Attic* sucked, the gameplay was stilted, the graphics were horrible and it just wasn't that much fun. I didn't feel like I could say anything because Peter was my boss!" We were not surprised to find out that this game was never released.

The legacy of the 7800 today, much like the other Atari consoles actually, is in its bustling homebrew community.

No man has had a greater impact on the machine in recent years than Bob DeCrescenzo, who moved to the 7800 after first having released several hacks for the 2600 and 5200. We asked him what made him choose the 7800. "I noticed two things about the 7800," he tells us. Firstly there was no *Pac-Man* at all for it (only *Ms Pac-Man*), and also there weren't many people creating homebrews for it. Those were the main two reasons. I moved over to the 7800. I had starting hacking *Ms Pac-Man* into *Pac-Man* and Curt Vendel noticed this and was kind enough to let me see the actual source code for that game to make it easier to know what I was doing. Around that time, they had found the encryption code needed to sign games to work on the NTSC version of the 7800, so I was able to make complete games as I got to know the system better. I enjoyed making/porting games to the 7800 so it just took off from there."

So what makes the 7800 such a good console to code on? "Well its big strengths are handling of sprites, number of colours and backwards compatibility. But I really wish they would have gone with the POKEY as the standard sound chip." Bob would certainly know, having produced excellent games like *Pac-Man Collection*, *Space Invaders*, *Moon Cresta*, *Scramble* and *Bentley Bear's Crystal Quest*. Does Bob still plan to support this greatly underappreciated console though? "Well, I had a good almost ten-year run making games for the 7800. I actually don't have anything planned for the 7800 currently, but with the release of 7800 BASIC there are already some really good games coming to light."

▶ The original version of Atari's plug and play Flashback console was based on the 7800

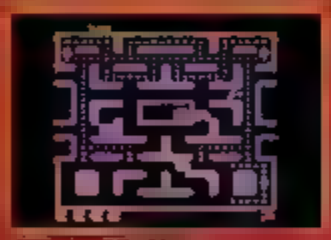
Perry Thuente is another man making waves in the homebrew world, having just finished a new version of *Donkey Kong* for the machine that takes advantage of the new 7800 Expansion Module. This remake is arcade perfect in every way and arguably the best version for any 8-bit console. He's had a similar route to the 7800 as Bob having also not owned one as a child and has similar thoughts about the hardware's strengths. "The sprite handling was very impressive for the time," he recalls. "It can handle a ton of on-screen objects without any flicker. The sound was definitely the primary weakness." Perry remains embroiled in the console's bustling homebrew scene and remains happy to tinker away on new games. "I have a few projects I would like to work on," he admits. "My first game to use the Yamaha chip in the XM will likely be an update to *Dig Dug*. I'm also interested in porting *Castle Crisis*, a *Warlords* clone, to the machine."

The 7800 might not be as well remembered as its more illustrious rivals the Sega Master System and NES which is a pity, as it really does deserve a place in your collection. It would be really interesting to imagine how things had played out if Warner had not sold Atari to the Tramiels, but the fact of the matter is that the 7800 was unfairly cut down before it had a chance to properly compete. And yet Atari's system remains a great console that provided a number of innovations from out-the-box backwards compatibility to digital signatures. It has a solid library of games including some outstanding arcade ports and a vibrant homebrew scene that continues to push the machine to new limits. With the upcoming 7800 XM the future is very bright for the Atari 7800 as it enters its 30th year.

Special thanks to: David Dentt, Darryl Still, Chuck Peavey, Bob DeCrescenzo, Perry Thuente, Curt Vendel and the Atari Museum.

TOP 10 ARCADE CONVERSIONS

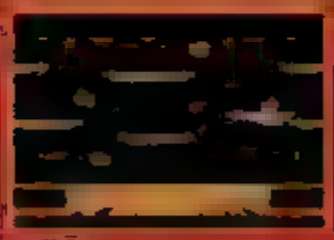
Atari's 7800 has some superb coin-op ports. Here are our favourites



MS PAC-MAN

YEAR: 1987

Programmed by GCC itself, designer of both the 7800 and the *Ms Pac-Man* arcade game, this port is the best for any 8-bit machine. One of the machine's launch games it features all the fruit, all the mazes, all the intermissions and near perfect ghost AI too. It was only surpassed by the homebrew release of Bob DeCrescenzo's *Pac-Man Collection* that includes this game as well as many different versions of both this and the original *Pac-Man* arcade game. This was also the game that got Bob into programming the 7800, lucky us!



JOUST

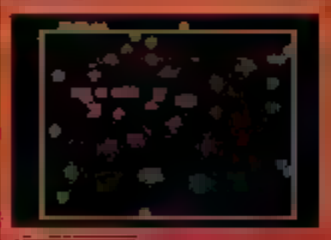
YEAR: 1987

Williams' 1982 arcade game *Joust* was one of the very first to introduce the concept of cooperative two-player gameplay. It also has to feature one of the wackiest ideas of any arcade game as you control a knight riding a flying ostrich trying to progress through the levels by defeating groups of enemy knights riding buzzards and collecting the eggs. The 7800 version is easily the most impressive for any 8-bit machine and is nigh-on arcade perfect. This is also without doubt one of the best multiplayer experiences to be had on the machine.

COMMANDO

YEAR: 1987

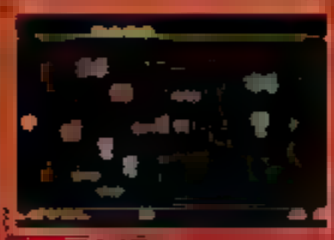
Sculptured Software did an amazing job of porting the popular Capcom coin-op to the 7800 and this remains one of the best versions of the game on any platform of the time. As well as looking superb, Atari allowed the programmers to use a POKEY chip on the cartridge for enhanced sound. The arcade game's soundtrack has been replicated brilliantly using the four channel chip and all the sound effects are provided by the native TIA. 7800 *Commando* is incredibly impressive and really shows what the 7800 is capable of in the right hands.



CENTIPEDE

YEAR: 1987

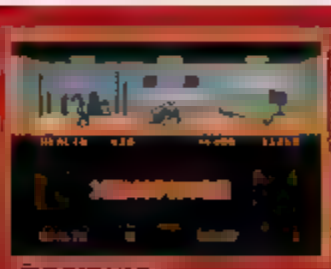
Don't be put off by the slightly rough looking graphics of this port, 7800 *Centipede* actually manages to improve upon its arcade parent. This is because Atari chose to include a fantastic two-player mode that allows you to team up with one of your friends to take out the hordes of insects, mushroom patches and the imposing centipede himself! Interestingly Atari also planned to release the sequel *Millipede* for the 7800 and despite it being rumoured that it was finished the game has never seen the light of day, still 7800 *Centipede* is more than fulfilling.



FOOD FIGHT

YEAR: 1987

The original *Food Fight* coin-op was designed and created by GCC, so it's no surprise to see this game on the 7800. It also won't be a surprise to learn that this is one of the best games on the machine! Just as you did in the 1983 arcade game you take the role of Charley Chuck as he runs around the screen throwing food at angry chefs and trying to eat the ice cream before it melts. *Food Fight* is insanely fun and we really do think it's criminal that this game was never converted to many home consoles. It gives us all a good reason to own a 7800 though!



XENOPHOBE
YEAR: 1989

We have always been huge fans of this 1987 Bally/Midway arcade game by Peter Oxman. A sprawling shoot-'em-up that takes heavy inspiration from the *Aliens* movie, the original coin-op was particularly notable for its all-screen three-player gameplay. While some of the home versions omit options that many of them were built around, such as three-player action, the 7800 version included. The Atari 7800 version of *Xenophobe* is massive and has some rather pretty visuals that make it far more impressive than its 8-bit counterparts.

KUNG-FU MASTER
YEAR: 1989

Irem's 1984 arcade game *Kung-Fu Master* is widely credited as being the first ever scrolling beat-'em-up. It was converted to pretty much every system under the sun at the time but the 7800 port by Arcadia is one of the best. It features far more detailed graphics than the well-known NES port and also has some remarkably good music too. The 7800 is actually well equipped for handling beat-'em-ups with the iconic *Ninja Gaiden* and a decent conversion of *Double Dragon* but *Kung-Fu Master* is still well worth checking

DONKEY KONG
YEAR: 1988

It seems strange to think that the 7800 got ports of both *Donkey Kong* and *Donkey Kong Junior* when they were also launch games for the NES. This is because Nintendo had already licensed the games to Atari, which had released them for the Atari 5200 computers, and so could not stop the following 7800 versions. Both *Donkey Kong* games stand up very well against the NES versions too. While this version is not arcade perfect that's been rectified by the homebrew version of *Donkey Kong* that

DIG DUG
YEAR: 1987

Namco's wacky 1982 arcade game *Dig Dug* was licensed for release in the West by Atari and despite its strange concept the game was one of the biggest hits of the 'golden age' of arcade games. This made it an obvious choice for 7800 conversion and this version is one of the best out there, with vibrant colourful graphics, impressive sound and addictive gameplay all set up to give you one of the best arcade experiences

MARIO BROS
YEAR: 1988

One of three Nintendo games to appear on the 7800, it perhaps seems even stranger that *Mario Bros* is on an Atari machine than *Donkey Kong*. The 1983 arcade game was not only the first game to use the Mario name (he was previously known as Jumpman) but also the first one to introduce his brother Luigi and his career as a plumber. Many of the attributes that made up the *Super Mario* games are seen in this early game and the simultaneous two-player action, providing more than

SOFTWARE CREATIONS

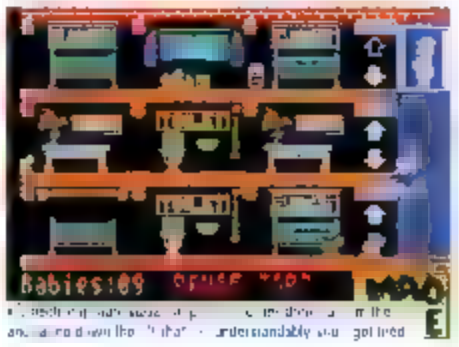
BUBBLES, BASEBALL AND BUZZ SAWS...

Scaling global software charts with games featuring dinosaurs, wizards and baseball stars, Software Creations was a development force to be reckoned with. We traced the history of the studio that started out in budget software and ended up in the big leagues

It might not be as well-known as Tim and Chris Stamper's famous studio Rare, but besides producing some of the best arcade ports of the Eighties, Software Creations shares the honour of being one of the first European companies to produce games for a new breed of Japanese games consoles. It was a journey that took founder Richard Kay from shifting boxes at Ocean to employing over a hundred staff, making exclusive deals with Nintendo and Sony and meeting the creators of *Space Invaders* and *Mario*. And it is, to quote one of its most famous releases, a rather fantastic story.

"When I joined Ocean wasn't a programmer, I was packing in the warehouse," recounts Richard. "But was always interested in the old Atari stuff. t intrigued me how they wrote these things. Eventually I got myself a BBC Micro with the money that earned at Ocean and taught myself to program assembly language. They were doing a game called *Mr Wimpy* on the Commodore 64 and at home did all the graphics and sound. walked in and showed it to Ocean director John Woods. And they took me on and continued paying me a box-packer salary but was happy because was writing games." However, after completing a couple of titles on the Amstrad *Hunchback* and *Hyper Sports*) Richard decided to move on to pastures new.

"I'd always had an interest in flying so signed up to the Air Force," he says. "I got accepted, but t turned out had a slight eyesight problem that they hadn't picked up initially. But I really enjoyed it. In fact when was in there in November '85, people got to find out what had done, and it was like being a pop star was signing autographs for *Hyper Sports*, which went on to go to number one at Christmas." Richard continued to program, coding *Mermaid Madness* and an unreleased port of *Repton* for the C64 despite a call from the RAF asking him back if he could take an A-Level Physics course.



"The business really took off," he confesses. "If you had worked at Ocean in those days it was like you'd been to Oxford University, it was a free pass. So many people were phoning. Firebird Software and loads of other companies contacted me, and being the businessman am, didn't want to turn this work down was working out of my bedroom at the time and I started on the Enterprise Allowance, it was about five pounds more than the dole but it gave you a bit more dignity. It was £40 a week but didn't need a lot in those days and

IN THE KNOW

■ Founded in Manchester in 1985, Software Creations started out doing 8-bit computer conversions for companies like Firebird and US Gold, before making a name for itself with its spectacularly accurate ports of *Bubble Bobble* on the C64, Spectrum, Amiga and several other home platforms.

■ The company was one of only three European companies to develop games for the NES on its release alongside Rare and Zippo Games. It was also the first studio outside Japan to develop games for the SNES, with *Equinox* and the awkwardly titled *Spider-Man And The X-Men In Arcade's Revenge*.

■ Besides more well-known coin-op conversions like *Bionic Commando* and *Ghouls 'N Ghosts*, Software Creations was the company behind *Psycho Pigs UXB*, a port of the Jaleco arcade game *Butasan*. It's probably most remembered for US Gold's dodgy ad, which featured a billboard with a half-naked woman and a boy saying "I know which one I'd rather play with."

▲ [C64] *Kwah!* was a physics-based arcade adventure originally released on the Spectrum.

"If you had worked at Ocean in those days it was like you'd been to Oxford University"

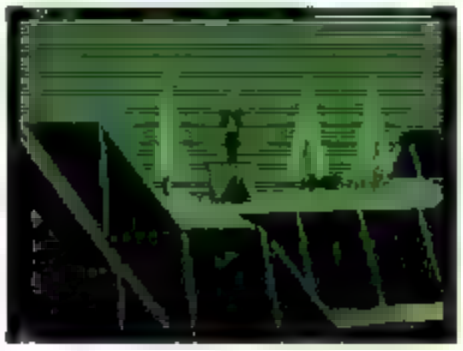
RICHARD KAY

allowed me to run the company. And so put an advert in the *Manchester Evening News* and Steve Ruddy responded."

"Steve and I hit it off right away. He worked from home, and he did a boxing game called *The Big KO*. We worked very closely with each other for about 12 months. I hired Mike Ager and Andrew Threlfall, and we were the first four at Software Creations. I got an office on Oxford Road and it was above a computer shop directly opposite the BBC. We did a lot of games for Firebird – they were all for about three or four hundred pounds." Most of the early Firebird games were ports of budget releases like the Spectrum version of the questionably bonkers *Mad Nurse* and several Speccy to C64 conversions by Steve Ruddy. "The early projects for Firebird were enjoyable and they required me to use the C64 in innovative ways," Steve recalls. "For example, *Kinetik* used colour bitmap mode, and *Mystery Of The Nile* used software sprites and a sprite multiplexer."

"The company grew and we took on Mike Follin to do *The Sentinel* on the Spectrum," continues Richard. "Everybody said it couldn't be done, but he proved them wrong. Mike had heard about Steve because Steve was from Wigan and the Follins were from St Helens and knew each other. After we took on Mike, his brothers Tim and Geoff followed, and a chap called Mark Wilson who was a very ▶

▲ Amstrad CPC: Attacked by nasty floating brains the moment you start.



▲ [Spectrum] *The Sentinel* was a deserving *Crash Smash*.

MORTAL MISFORTUNE

One episode of Software Creations' history that Richard would rather forget is the *Mortal Kombat* licence deal that went awry. "*Spider-Man And X-Men* started going horribly wrong and Acclaim were screaming at us and threatening litigation, and we ended up with three teams on this one game," he tells us. "I went to Portugal with my wife and one-year old son and got a fax from Acclaim saying they wanted me to fly home and sort out the problem with the game. I said 'No, I'm on holiday with my family, because, really, there was nothing more I could do, the team was already working on it. I got a fax the next day saying 'The guys upstairs have said because you won't show commitment we're pulling *Mortal Kombat*.'. A few years later after I'd left Creations I went to the first E3 show and I bumped into an Acclaim exec and he said 'You know, you lost $40 million in royalties on all the versions across the various formats.' And I do occasionally still wake up in a cold sweat over it. So now I'm paranoid about project plans to the point I actually do more project plans than actual projects!"

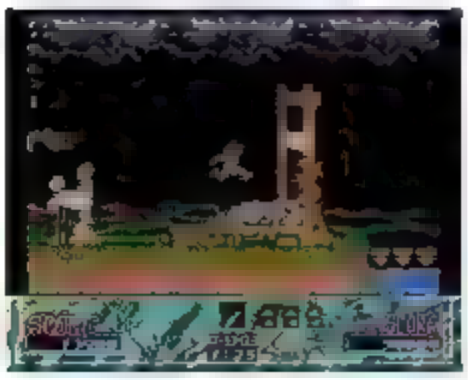
▲ [C64] *Mystery Of The Nile* an ongoing action adventure where players could switch between three different characters.

▶ talented artist. They already had their own company and we did some follow-ups to some of their games, like *Agent X 2* on all the 8-bit formats."

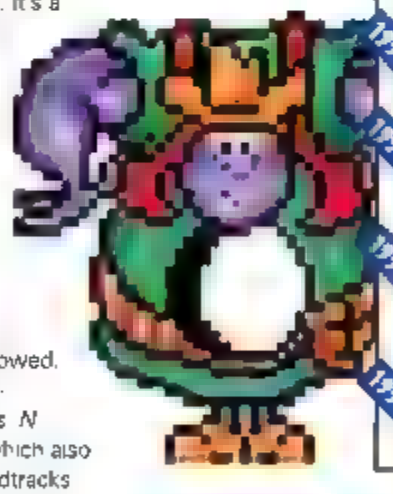
Tim Follin is rightly considered one of the finest musicians to work on the C64, as well as being remembered for his later work on games like *Solstice* and *Equinox*. As Steve remembers, *Agent X 2* had a particularly funny jingle lifted from a current British TV ad. "I worked very closely with Tim as wrote a few of music drivers he used on the C64, Amstrad, Speccy and NES." he says "Having written the drivers was astonished by the sounds Tim got out of them, not to mention his composition and bonkers sense of humour. Shake N' Vac was classic!"

While the budget-fare certainly helped pay the rent, it was with a brilliant arcade conversion that Software Creations finally hit the big time. "We were always interested in the arcades and then Firebird offered us *Bubble Bobble*," says Richard. "That really did launch the company because they said you couldn't do that on the 8-bit machines. I think the Commodore 64 version was the one that really did propel us forwards and it won all sorts of awards which I showed how good the team was."

We ask coder Steve Ruddy if he had any worries about converting such a massive arcade hit. "It wasn't daunting originally, as it looked like a fairly straightforward platform and sprite game," he replies. "However once you start playing you noticed how the bubbles followed air flow patterns and how they all gathered in fixed places. Lots of sprites on the same line meant a sprite multiplexer wasn't suitable. Fortunately, having worked on the BBC Micro and *Mystery Of The Nile*, I wasn't averse to using software sprites. We spent an awful long time playing the game. It's a fantastic arcade game. We didn't understand all of the secrets so we just implemented the game to mimic what we did notice. So how the pick-ups appear isn't the same as the arcade on the C64, but it should be very similar to how the pickups appear after the machine is powered up."



Conversions of more big arcade coin-op titles followed, including extremely well-received ports of *Ghouls 'N Ghosts* and *Bionic Commando*, which also featured stunning Tim Follin soundtracks. "Attempting to get recognisable versions of the maps, sprites and gameplay on the Commodore 64 was very tricky for both," admits Steve, who wrote both Commodore versions. "*Bionic Commando* was all about the bionic arm and how the player controlled it. I did spend a lot of time working on the mechanics of the bionic arm and it was worth it as I found even with just one fire button I could use the arm when I needed without having to think about it. Also, with the cabinet available in the office we got really good at it and used to have races to see how fast we could finish it! *Ghouls 'N Ghosts* was more about the complexity of the maps and massive baddies with loads of frames of animation."



TIMELINE

1985 SOFTWARE CREATIONS IS FOUNDED AS A SOLE TRADER COMPANY BY RICHARD KAY

1986 STEVE RUDDY JOINS THE COMPANY AND WORKS ON C64 CONVERSIONS FOR FIREBIRD, INCLUDING *MYSTERY OF THE NILE* AND *KINETIK*. THE FOLLIN BROTHERS, MIKE AGER AND OTHERS FOLLOW

1987 *BUBBLE BOBBLE* IS RELEASED ON A VARIETY OF FORMATS AND QUICKLY BECOMES A BIG CRITICAL AND COMMERCIAL SUCCESS

1988 *BIONIC COMMANDO* ARRIVES ON SEVERAL FORMATS INCLUDING C64, SPECTRUM AND AMIGA

1989 THE COMPANY RELEASES PORTS OF *GHOULS 'N GHOSTS* AND *LED STORM*, AND MOVES INTO SPECIALLY-BUILT OFFICES IN MANCHESTER

1990 JOHN AND STEVE PICKFORD JOIN TO WORK ON *EQUINOX* ON THE ONLY SNES DEVKIT OUTSIDE OF JAPAN, AS ITS PREQUEL *SOLSTICE* SHIPS

1991 THE NES CONVERSION OF THE NEW ZEALAND STORY *BITS STORIES*, ALONG WITH *INDIANA JONES AND THE LAST CRUSADE* AND *TOM & JERRY*

1992 THE COMPANY'S FIRST SNES TITLE *SPIDER-MAN AND THE X-MEN IN ARCADE'S REVENGE* ARRIVES, ALONG WITH A CONVERSION OF *DOUBLE DRAGON III* ON THE MEGA DRIVE

1993 *EQUINOX* HITS RETAIL, FOLLOWED BY AN ORIGINAL PICKFORD BROTHERS TITLE *PLOK*

1994 *TIN STAR* IS RELEASED. SOFTWARE CREATIONS IS ACQUIRED BY BCE MULTIMEDIA AND BECOMES PART OF THE RAGE SOFTWARE GROUP

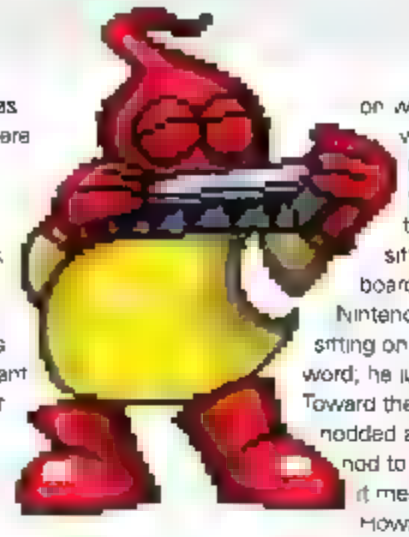
1995 NINTENDO ANNOUNCES SOFTWARE CREATIONS AS A MEMBER OF ITS 'DREAM TEAM' OF DEVELOPERS FOR THE NINTENDO 64. RICHARD KAY DEPARTS FROM THE COMPANY

But it was *Bubble Bobble* that really made a splash, even across the pond. "Once we had done that conversion we got a lot of calls from America," says Richard. "Taito themselves asked us to do a lot of games for them like *Sky Shark* (aka *Flying Shark*) and *Puzznic*. Taito actually brought Tomohiro Nishikado, the creator of *Space Invaders* over, and for us it was like meeting the father of videogames. We literally all lined up and bowed. That was definitely a highlight of that period. And we became well-known for doing coin-op conversions and took a lot of stuff on that other people wouldn't do. So we were starting to grow and the company ended up with about 105 staff, and we had an office in Seattle which was exciting, and that was really to service Nintendo."

"I'd been chasing Nintendo for a long time," Richard reveals. "It was Colin Fudge, one of the producers at Firebird that first introduced me to the NES. Colin opened this draw and out popped this original Famicom, and he said 'this is what you want to get into.' I remembered the old days of the Atari cartridge systems and wanted to get back to the console days, so I got in touch with the Chamber of Commerce in Manchester and found Nintendo's number. And for about three months I continually phoned Howard Lincoln [the chairman of Nintendo of America at the time]. Eventually he picked up the phone and I said 'My name is Richard Kay from Software Creations, we've got a small team in Manchester and I'd be very interested in working on your machine.' He said 'If you can get the information on the machine and write a demo, we will give you the information.' In other words 'get stuffed.'"

"Then I discovered that Mike Webb was reverse engineering the NES which is where Mike came into the business. I'd worked with Mike at Ocean and he was a genius. Not only could he program, he was also an electronics engineer – he used to work for a company that designed high-voltage switchgear for power stations. So Mike had this unique combination of electronics skills and software skills, and he was brilliant at both. About three months after my first call to Nintendo I phoned Howard again. Mike had written the initial code for what ultimately ended up being *Solstice*. I spoke to Nintendo again and said 'Look, we've got a demo' and there was this deadly silence on the end of the phone. And I said 'I'll be in Seattle next week can I show you the game?' I didn't even have a passport. Howard said 'Sure, if you're here next week pop by on Thursday.' So we booked a cheap flight and flew to Seattle.

From the moment we met Nintendo we just knew that we were going to get on with them. We had this board with wires sticking out looking like something out of Cape Canaveral. And we put it on the table and Howard Lincoln was sitting opposite me in this huge boardroom, and Minoru Arakawa [Nintendo of America's founder] was sitting on the right. Arakawa didn't say a word; he just sat and nodded a few times. Toward the end of the meeting Arakawa nodded again, but it was a different nod to the others you knew it meant something different. Howard looked at me and said 'We know you are two young guys who are keen and we can see this demo you've done is very impressive. Nobody's done this before, and we are going to take a chance on a company [that] wants to take a chance on us. I'll see you at the consumer electronics show in Las Vegas. We'll have a contract for you there.' We hadn't even paid for this bloody flight. That night ▶



▶ (SNES) A patriotic Pick meets the Fire Queen

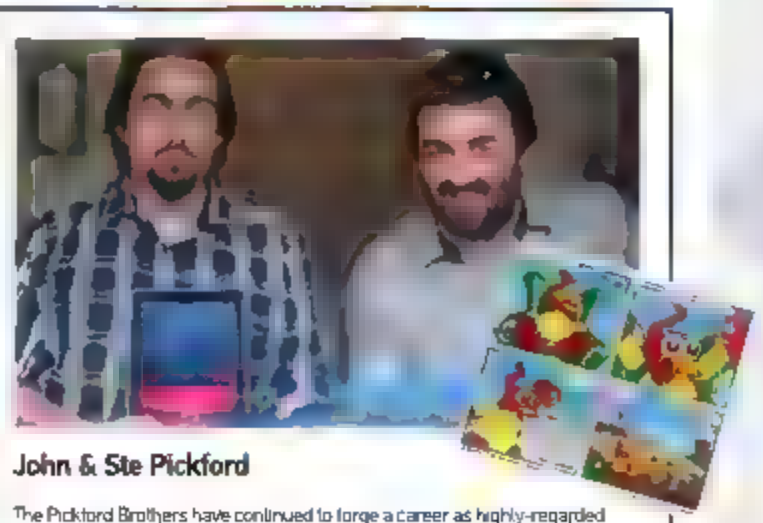
WHERE ARE THEY NOW?

Richard Kay

Richard is currently enjoying life in sunny Jersey, where he was involved in setting up the online entertainment outlet BlahDVD, for which he wrote the software that now helps run his son's business www.gizzmoheaven.com. "We've been running it since 2008, we've recently hit 6 million orders," he says. "I've written all the backend system and I do the database and website. He still nurtures a love of flying, becoming the first civilian to complete the RAF's Fast Jet Training Course, and for a while owning his own Jet Provost. "I sold because it was hideously expensive to run. Besides my wife hates me flying, and I can't be burning my kids' inheritance like that!"

Steve Ruddy

Steve stayed at Software Creations until it was acquired by Acclaim and subsequently sold off after the company's unfortunate collapse in 2004. During this time he worked on a number of projects including *Hexen* on the N64 and *Mario Artist* on the ill-fated Nintendo 64DD. After a stint at several different studios he's currently Technical Director at Yippee Entertainment where he recently completed the funky simian-flinging game *Chimpact* (see www.chimpact.com).

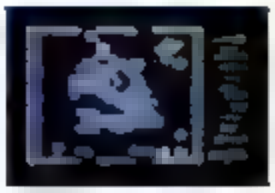


John & Ste Pickford

The Pickford Brothers have continued to forge a career as highly-regarded and well-loved independent developers with the likes of *Naked War* and the BAFTA-nominated *Magnetic Billiards*. They've also recently revived *Plok* in the form of an online comic called *Plok The Exploding Man*. For more information, fling your digits at www.zee-3.com

DEFINING GAMES

BUBBLE BOBBLE

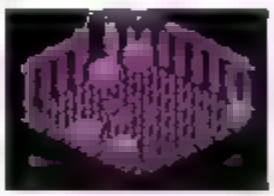


Quite simply one of the finest 8-bit arcade conversions ever. Steve Ruddy's C64 port of *Bubble Bobble* was a near-perfect facsimile of the classic Taito arcade game. It's all here – the jingles, simultaneous two-player mode and the 100 screens of the coin-op. The fact that it's presented in a single load is nothing short of astonishing.

BIONIC COMMANDO

Although lacking the graphical clarity of *Bubble Bobble*, this was another excellent Steve Ruddy C64 port, capturing the great playability of the Capcom arcade game. The feat of mapping the coin-op's two-button control system to a single-button joystick works surprisingly well, and that Tim Follin soundtrack is utterly joyous.

SOLSTICE

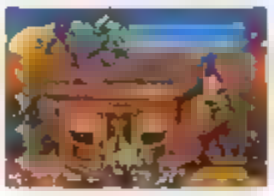


Mike Webb's intricate isometric adventure was much inspired by Ultimate's *Knight Lore*, and was Software Creations' first NES release. There are over 250 locations spanning castle keeps, dungeons and caverns as its wizard hero, Shadax, quests to save a kidnapped princess from a thoroughly nasty sorcerer named Morbius.

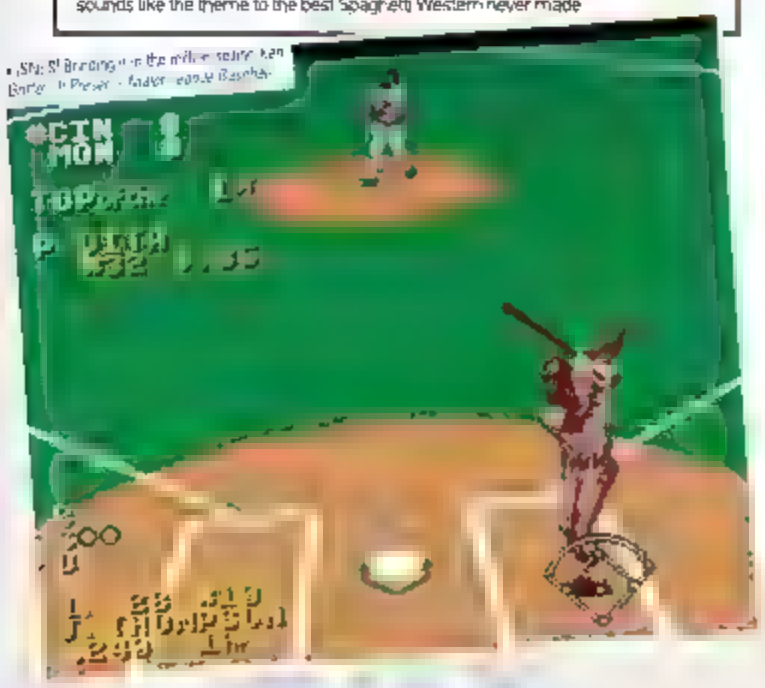
PLOK

A beautifully crafted platformer from the Pickford Brothers, *Plok* was highly rated by Mario-creator Shigeru Miyamoto, and that's certainly some endorsement. With its mischievous limb-flinging hero and playful sense of humour, there's much to enjoy as you chase flags, punch fleas and buzz-saw your way across its colourful levels.

TIN STAR



This Super Scope compatible on-rails shooter is another quality Software Creations original, packed with robotic gunslingers, hovering stagecoaches and great character design. Special mention has to go to the amazing Morricone pastiche on the title screen, which sounds like the theme to the best Spaghetti Western never made.



▶ [C64] Steve Ruddy's exceptional conversion of *Bubble Bobble*.

"We became the very first SNES developers outside of Japan"

STE PICKFORD

▶ Mike and drank ourselves sober and we celebrated for three days."

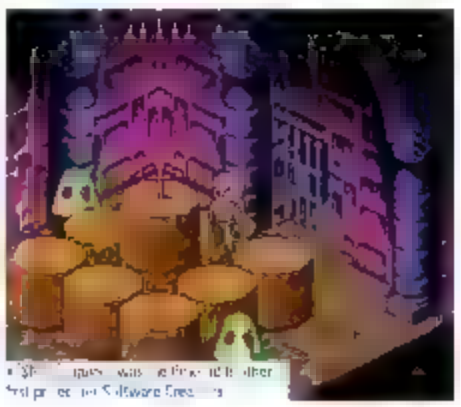
The Nintendo deal led to some high profile NES and later SNES releases including *Solstice*, *The New Zealand Story* and *Ken Griffey Jr Baseball*, which sold a staggering 1.2 million units. It also secured two talented designers in the shape of John and Ste Pickford. "When our studio, Zippo Games, started doing NES work with Rare around 1988, we were one of only three studios in Europe developing games for the machine," remembers Ste. "The other two were Rare and Software Creations, who had offices 300 metres away from ours although the secrecy was such that we never collaborated on NES stuff. Eventually Zippo was sold to Rare and became Rare Manchester, then was closed down. At that point, John phoned up Rick to see what was available, and he offered him a job straight away, and asked if was available as well.

"Nobody in the world had any SNES experience at that point," explains Ste. "The reason Rick jumped at the chance to hire us was that they'd been given the very first SNES devkit outside of Japan. During the Zippo days, Rare had got the first Game Boys in Europe, and we happened to start working on the first Game Boy game for Rare (although it was canned). Rick hired us to design and develop a *Solstice* sequel, *Equinox*, on this new hardware, so we also became the very first SNES developers outside of Japan, on top of being the first Game Boy devs."

The Pickfords followed *Equinox* with the charming *Plok*, which was based on the pair's aborted arcade game *Fleapit*. "The *Fleapit* game was developed for Rare's custom Razz hardware," says Ste. "It had such an odd, and brilliant, graphics system that it wasn't ever going to be possible to convert the half-finished *Fleapit* to another platform. We just kept working on the concept and idea after we started at Creations, looking for an opportunity to get the game made somehow. Towards the end of *Equinox* we presented the *Plok* concept to Rick. We had our game designs, concept art and a VHS tape of *Fleapit*. Rick liked the idea, and it became Software Creations' first self-funded original game with John and retaining ownership of the character and IP.

"Our big missed opportunity with *Plok* was that it didn't go with Nintendo," laments Ste. "Rick presented a version of *Plok* to Nintendo in Japan, to see if they'd publish it. We're told that Mr Miyamoto went away to analyse the game, and at a later meeting wrote down the following list on a piece of paper for Rick: 1. *Mario*, 2. *Sonic*, 3. *Plok*. This, he said, was the list of the current best platform games, and *Plok* was only half finished at this point! If work with you on *Plok*, he said, 'the list will look like this: 1. *Mario*, 2. *Plok*, 3. *Sonic*.' So Mr Miyamoto would help us to make *Plok* better than *Sonic*, but not better than *Mario*.

"We were 100 per cent up for this, but for one reason or another Nintendo of Japan passed and Rick had to find another publisher, and it ended up with Tradewest who didn't really do a very good job of selling the game. Later Nintendo came out with *Yoshi's Island*, which is probably one of the best videogames ever made, but had a couple of things that looked very familiar from *Plok*, particularly the vehicle mini-races within the levels. I suspect *Yoshi's Island*



▶ [SNES] *Plok* was Software Creations' first project on Nintendo's 16-bit console.

was in development at the time, and perhaps Mr Miyamoto decided *Plok* was too similar for it to be worth working on both. It's a shame, as we would have had a big hit on our hands if the Nintendo thing had come off. As it is, we made a great game, that's well loved but which wasn't a big hit. We have to content ourselves with making a cult classic instead."

Another original SNES title, *Tin Star*, featured character design by former feature animator Scott Pleydell-Pearce. "I believe it was Rick who had the concept of a robot Western shoot-em-up, possibly inspired by Yul Brynner in *Westworld*," Scott recalls. "I did the usual research on cowboys and Westerns along with help from Phil Bretherton, who was the technical artist. Once the style had been nailed and approved we started the painful process of trying to create the pixel art and animation. Huge respect goes to Phil for his patience and perseverance in trying to teach me about anti-aliasing and how to keep to the memory restrictions – that was such an alien concept for me as an artist. Looking back on the game, I'm proud of what we all created for the times."

There were a few flops between the successes – Richard admitting that games like *The Tick*, *Cutthroat Islands* and *Waterworld* were scuppered by their source material. "*Waterworld* went way over-budget, like the film," he laughs. Richard is also haunted by a missed opportunity – losing the contract to produce the home versions of *Mortal Kombat*. "That really hurt and I think after that I couldn't come back from it," he admits, before adding an upbeat anecdote about the game with which he replaced the absent project, "*Barbie Vacation Adventure*!" he cringes. "We ended up paying the money back, it did that well. From potentially making $40 million, I think we paid back £10,000. I knew I was losing it at that point."

In 1994 Richard decided to call time on his business, and Software Creations ended up in the hands of Rage Software. "I could see with the N64 coming we would only be able to develop three games a year, and the chances of one being successful would be highly unlikely," he says. "A lot of people probably thought that I let them down, but when staff found a new job they always said it was never personal. But it was a really good team. We were all very young – when I set up the company I was 21, and by the time I sold it I was 29. We were one of the first to give a percentage of royalties to staff because when I worked at Ocean, I saw them turning up in Mercs and BMWs and I knew how it felt. We did a lot of things right and we did a lot of things wrong, but we had games coming out of our ears. When I look back, I was meeting film producers, 20th Century Fox, Sony and Nintendo... it's almost like it didn't happen." Luckily, it did.

THE DNA OF... SOFTWARE CREATIONS

PROGAMMING PASSION

The company had an amazing pool of programming talent, pulling off conversions that many said were impossible, such as Steve Ruddy with *Bubble Bobble* on the C64 and Mike Follin with *The Sentinel* on the Spectrum. Other coders did superb jobs with their own original designs, like Mike Webb with *Solstice* and the Pickfords with *Plok*. Tim Follin was especially brilliant at producing in-game music that made you believe you were listening to something more than a computer-generated soundtrack.

ANIMATED HI-JINKS

Richard Kay had a soft spot for hand-drawn animation, and titles like *Tom & Jerry: Tin Star* and *The Tick* featured great cartoon-style visuals. Software Creations was also one of the first game studios to hire professional animators, taking on artists from Cosgrove Hall, producer of *Danger Mouse* and *Count Duckula*, after it lost the licence with Granada TV.

CONVERSION CAPERS

The success of its *Bubble Bobble* ports for the home platforms earned Software Creations a reputation as an excellent arcade conversion studio, leading to projects like *Biing!*, *Commando*, *Sly Spy*, *Ghouls 'n Ghosts* and *The New Zealand Story*, and a close working relationship with coin-op manufacturer Taito.

LICENSED HEROES

Software Creations was also famous for its licensed movie, comic-book and TV tie-ins, from *Indiana Jones And The Last Crusade* and *Thomas The Tank Engine* to Marvel superhero licences including *Silver Surfer*, *Wolverine* and *Spider-Man And Venom: Maximum Carnage*.

A SPECIAL RELATIONSHIP

After impressing Nintendo with its technical mastery of the NES with *Solstice*, Software Creations formed an intimate bond with the company and its consoles. It was rewarded with the lucrative contract to the *Ken Griffey Jr Baseball* franchise on the SNES and Game Boy, and later became part of Nintendo's exclusive Dream Team, developing the sound tools used by all developers on the Nintendo 64.

THE WONDER BOYS

A WESTONE RETROSPECTIVE

Established by former Tehkan employees, Westone Bit Entertainment is mostly known for its Wonder Boy/Monster World series. However, it also crafted a variety of titles with a distinct visual style and consistently excellent gameplay

At its beginning, Westone consisted of only three staff members, all working in the custodian's room of Tehkan. After the success of its *Wonder Boy* series of games, it later expanded throughout the Nineties. At its height in 1998, the company had two offices at its disposal and had employed about 35 staff members altogether.

The company was originally formed under the name Escape, and consisted of three people: Ryuichi Nishizawa and Michishito Ishizuka, the two founders – who also acted as programmers – as well as Hiromi Suzuko, a graphic artist. Nishizawa reveals that he got his foot in the industry from hanging out in the arcades. "When I was 17 years old, Mr Ishizuka and I were playing at an arcade run by Tehkan, which is the company where he worked. He asked me, 'if you like playing games so much, would you like to try working part-time at our company?' We both learned how to develop games when working part-time at Tehkan."

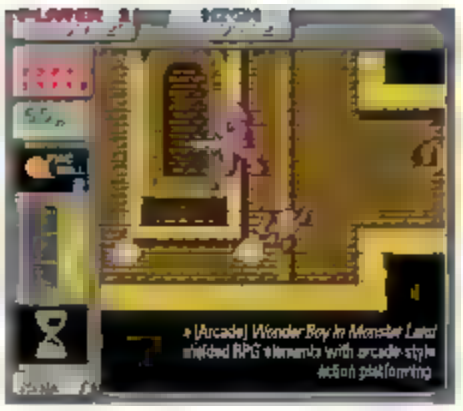
Nishizawa helped work on the soundtrack for *Swimmer* before leaving for JPL. Here he worked a handful of other games, including *Nova 2001*, *Ninja-kun Majou No Bouken* and *Raiders 5*. From there, Nishizawa got back into contact with Ishizuka, and they discussed forming their own company. "I wanted to be an entrepreneur ever since I was in high school," explains Nishizawa. "Ishizuka-san and I had been classmates since we were 14 and we were good friends. *Space Invader*-type games were very popular and every day we went to the arcades. We promised that we would work on games together in our own company. I thought if I made three games at JPL, I would obtain enough knowledge to develop on my own. So he and I followed up on that promise to work together."

▲ (Arcade) *Ninja-Kun Majou No Bouken* was released in 1984 by JPL and was one of the first titles worked on by Nishizawa.

▲ (ZX Spectrum) The title screen of the ZX Spectrum port of *Monster Land* features the hero in his famous diaper/nappy outfit.

IN THE KNOW

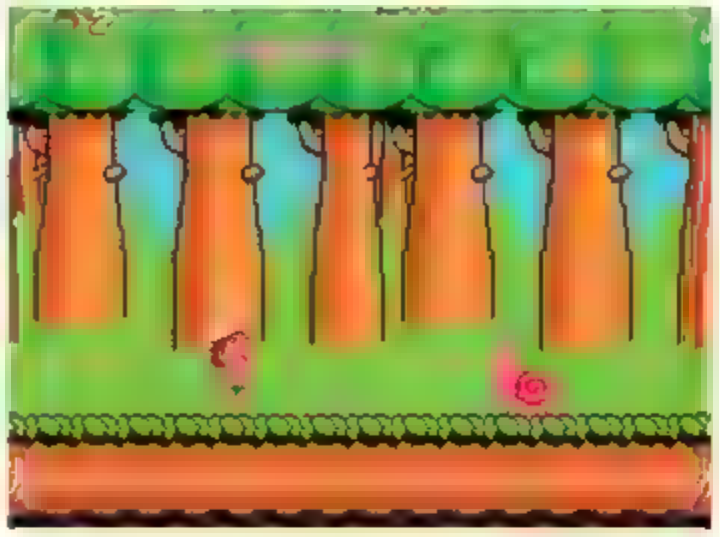
- Westone was initially known as Escape – after the button found on a keyboard – but was afraid it suggested unreliability, so the company changed it to Westone.
- The company name is pronounced "West-stone" rather than "West-one". It is a portmanteau of the English translations of the first kanji in each of the founders' last names (nishi = west, ishi = stone).
- The initial title of *Wonder Boy* was 'Wonder Bocke' named after the eponymous hero, but was changed at the request of Sega.
- Sega published Westone's arcade games and many console titles, but Hudson Soft also ported Westone's various works to the PC Engine, often with inexplicable changes.
- *Wonder Boy* was featured in Fleetway's *Sonic The Comic* series starring Shion, the hero of the first Mega Drive game.
- Westone developed the North American exclusive Sega CD port of *Dungeon Explorer*, which was completely different from its PC Engine and Super Famicom counterparts.
- Westone also developed *Apparel Gateball* for release on the PC Engine, one of the very few videogame croquet simulators.



▸ [Arcade] *Wonder Boy in Monster Land* melded RPG elements with arcade-style action platforming

Since the company was just beginning, in order to save costs the trio rented the custodian's room in Tehkan's office building. They were allowed to stay for free, as long as they helped with the maintenance. Their days were spent programming, their nights were spent performing janitorial duties.

Still, the space was adequate for their duties and the accommodations were decent for such a small space. "There was also a kitchen and a bathroom... slept there, but Ishizuka-san and Suzuko-san slept at their homes." Westone's first game was *Wonder Boy*, a side-scrolling platformer similar to *Super Mario Bros* starring a young prehistoric boy named Bocke (renamed Tom-Tom in worldwide releases). In addition to the usual bad guys and bottomless pits there is also a meter that counts down quickly, which can only be replenished by grabbing fruit power-ups. "I wanted to make an action game with the feeling of pressure," explains Nishizawa. "Therefore I made a horizontal-scrolling platformer where the player could not stop moving. It was too difficult, and I was unable to play it, so I regretfully had to change it. That became *Wonder Boy*. The skateboarding item is a remnant of the initial plan."



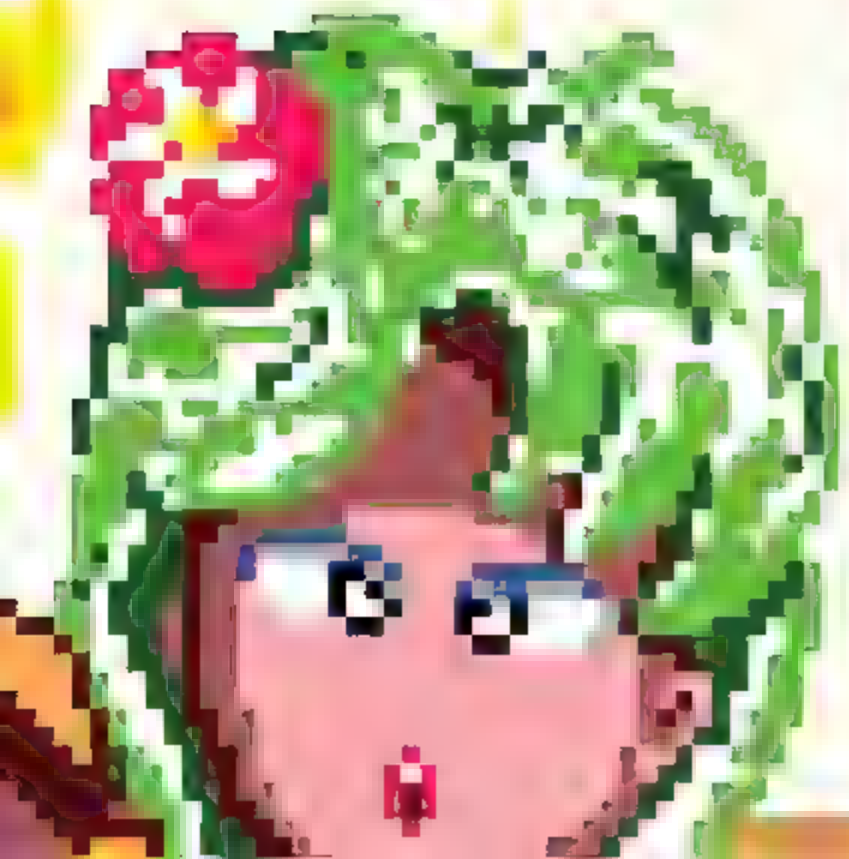
▸ NES: *Wonder Boy* ended up on Nintendo platforms renamed as *Adventure Island*, starring Hudson mascot Takahashi Meijin

Wonder Boy was published by Sega and performed quite well. "*Wonder Boy* was commercially successful, so with that money we moved to a larger office," continues Nishizawa. Escape had a unique contract, however. While Sega published *Wonder Boy*, the company still held onto the rights of the game itself. They sold the game to Hudson, who then ported the game to the Famicom. In the process, they replaced Bocke with a cutesy version of Toshiyuki Takahashi (more casually known as Takahashi Meijin), the company spokesperson. This partnership with Hudson continued throughout the decade.

It was long believed that Sega owned the rights to the *Wonder Boy* name, which is why Hudson changed the names and

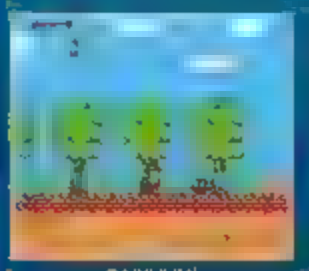
"He asked me, 'if you like playing games so much, would you like to try working part-time at our company?'"

NISHIZAWA RECALLS SHIZUKA'S PROPOSAL TO WORK TOGETHER



THE MANY FACES OF WONDER BOY IN MONSTER LAND

The sprites of *Wonder Boy in Monster Land* have been altered [illegible] PC Engine port, the cast has [illegible] characters from the Bikkuriman [illegible] The Famicom version, published by Jaleco, was renamed [illegible] World, takes place [illegible] stars Son Goku the legendary Monkey King. The Bra[illegible] stars the characters of Mauricio de Sousa's *Monica's Gang* comic and cartoon series [illegible] the mobile phone port once again stars chubby Takahashi Meijin, [illegible] the *Adventure Island* game.



SAIYUUKI

BIKKURIMAN

MONICA

TIMELINE

1986 THE THREE FOUNDERS LEAVE TEHKAN TO FORM ESCAPE AND A DEAL IS FORMED WITH SEGA TO PUBLISH ITS FIRST TITLE, WONDER BOY

1987 ESCAPE CHANGES ITS NAME TO WESTONE, MOVES OFFICES, HIRES ADDITIONAL STAFF AND DEVELOPS WONDER BOY IN MONSTER LAND

1988 WONDER BOY III: MONSTER LAIR IS RELEASED

1989 WONDER BOY III: THE DRAGON'S TRAP IS RELEASED, BUT ONLY IN EUROPE AND NORTH AMERICA

1991 POWER ELEVEN AND WONDER BOY IN MONSTER WORLD (MONSTER WORLD III) IS RELEASED

1994 BLOOD GEAR FOR THE PC ENGINE AND MONSTER WORLD IV FOR THE MEGA DRIVE ARE RELEASED

1995 DUNGEON EXPLORER FOR THE SEGA CD IS RELEASED. THIS IS THE LAST WESTONE TITLE RELEASED IN NORTH AMERICA FOR SEVERAL YEARS

1997 WILLY WOMBAT FOR THE SATURN IS RELEASED

1999 MILAN NO ARUBAITO COLLECTION FOR THE PLAYSTATION IS RELEASED

2002 NEON GENESIS EVANGELION: AYANAMI RAISING PROJECT, THE FIRST OF FOUR PRODUCTS BASED ON EVANGELION, IS RELEASED FOR THE DREAMCAST

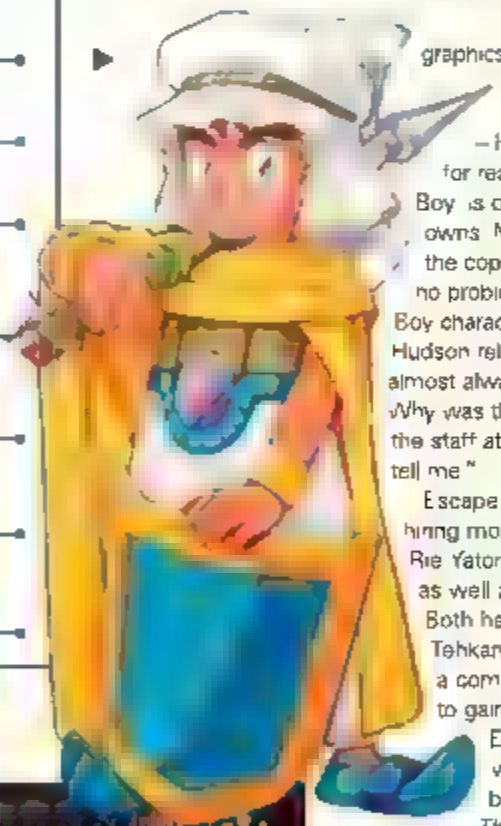
2005 PRINCESS MAKER 4, THE LATEST ENTRY IN THE LONG-RUNNING SERIES IS RELEASED FOR THE PLAYSTATION 2

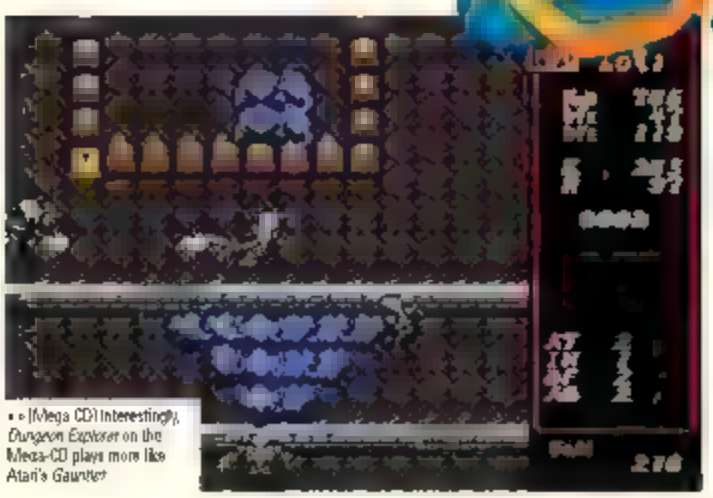
2007 MONSTER WORLD COMPLETE COLLECTION FOR THE PLAYSTATION 2 IS RELEASED

2012 SEGA VINTAGE COLLECTION: MONSTER WORLD FOR THE PSN, XBLA AND WII VC IS RELEASED

"I want to make an action game with the feeling of pressure"

NISHIZAWA DESCRIBES THE TIME LIMIT IN WONDER BOY





▲ (Mega CD) Interesting), *Dungeon Explorer* on the Mega-CD plays more like Atari's *Gauntlet*

graphics to avoid interference. However, according to Nishizawa, this is not true – Hudson made alterations for reasons unknown. "'Wonder Boy' is only a trademark that Sega owns. My company owns all of the copyrights. Therefore, there is no problem in letting the Wonder Boy character appear in any game that Hudson releases. However, Hudson almost always changed the character. Why was that? I once politely asked the staff at Hudson, but they would not tell me."

Escape continued to expand, hiring more developers, including Rie Yatomi, the wife of Michishito, as well as Shinichi Sakamoto. Both had previously worked for Tehkan, as a graphic designer and a composer, respectively. In order to gain capital for its next big title, Escape accepted contract work to develop a title based on the movie *Jaws: The Revenge*. The game was published only in North America by LJN, and while it's a unique title, it also has a reputation for being substandard.

The reason for its quality and brevity can be easily explained – it was developed over the period of two months. "*Jaws: The Revenge* for NES was developed by myself, Mr Sakamoto and Mr Ishizuka. I drew all of the graphics. After the release of *Wonder Boy* but before starting *Monster Land*, we developed it at the request of Atlus. We created it in about two months. Upon watching the videos on YouTube, it's quite slipshod isn't it?"

Westone's next big title was *Wonder Boy In Monster Land*, which recast the prehistoric hero of the original game as a sword-wielding warrior. Rather than just straightforward platforming, there are also towns to visit, equipment to purchase and NPCs to talk to. Nishizawa explicitly traces this influence to his fascination with computer RPGs. "It's because I got absorbed in *Wizardry*. After *Wonder Boy* was released, we played it every day while avoiding work. Therefore, I wanted to combine RPG elements with an action game."

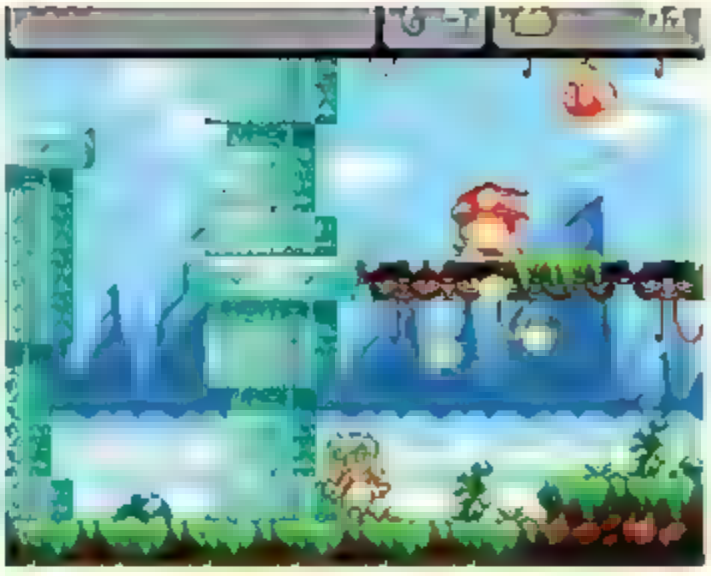
Westone followed up *Monster Land* by returning to its action-platformer roots with *Wonder Boy III: Monster Lair*. The team had wanted to implement two-player simultaneous play in the original *Wonder Boy*, but ran into one substantial issue – how do you keep two players on the screen at the same time so one doesn't scroll the screen while leaving behind the other? *Monster Lair* attempted to solve that problem by auto-scrolling the screen, so both players advance at the same pace.

After this, Nishizawa and his team went back to world of *Monster Land* to create a direct sequel, this time one aimed especially at the home audience. This fourth *Wonder Boy* game became known as *Wonder Boy III: The Dragon's Trap* in North America (the numeral was dropped for the European release) and *Monster World II* in Japan. It's about here where the series numbering becomes confusing to English speakers, which Nishizawa apologises for, since these localisation decisions were made by Sega and not by his company.

The Dragon's Trap was developed for the Master System, but was only released for the platform in North America and Europe. Its Japanese release was cancelled due to Sega abandoning the system in that territory, but was eventually released in modified forms for the PC Engine and Game Gear.

MONSTER WORLD IN THE MODERN ERA

There are two separate Monster World compilations. The first was released as part of the Sega Ages 2500 budget line in Japan for the PlayStation 2, and includes all entries in the series on Sega platforms. In 2012, Sega Vintage Collection: Monster World was released worldwide on XBLA, PSN and Wii Virtual Console. Most importantly, this is the first time that Monster World IV and the arcade version of Monster Land had been officially released in English. The English ROMs for Monster Land floating around the internet are bootlegs. Strangely, the original Wonder Boy is missing, hence the game being called the Monster World collection rather than Wonder Boy. Additionally, The Dragon's Trap is absent. While this game is often deemed the best by fans of the series, it is considered the least financially successful by Sega of Japan.



» Mega Drive/New Mega Drive titles took us gamers as Monster World IV

» (Arcade) The sprites of Aquario seem to have the same [illegible] wide-eyed charm as the Wonder Boy games

After four iterations of the *Wonder Boy/Monster World* series, Nishizawa took a different direction with the arcade game *Aurail*, a mecha action title featuring a walking tank called a Transom. There are two gameplay perspectives: traditional overhead 2D run-and-gun scenes, similar to *Iron Tank* and *Mercs*, and 3D first-person action scenes, where you walk through tunnels and fight robots.

"I used to love shooting games. Myself, I had made many comical action games, so I wanted to create a game that fully utilised the skills of the rest of the development staff," says Nishizawa. "So, I was able to develop *Aurail* because I had a team who excelled at mechanical designs. Masanori Yoshihara, who drew the character illustrations for *Monster World II*, was in charge of the mechanical designs. Additionally, Maki Ohzora was in charge of the background designs. She had just joined the company, and her first work was background design for *Aurail*. Also, designed the player's robot and the enemies in the 3D scenes using a 3D modelling tool."

Aurail was originally conceptualised as a fully 3D game. "Sega's System 16B had the ability to scale sprites, which could be used to build pseudo-3D visuals. At the time there wasn't any way to generate polygons. So, I worked very hard on those stages. However, I wasn't able to create enough of them, so the 2D stages were included to flesh it out."

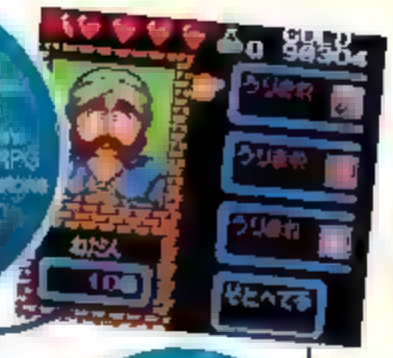
The next title in the *Wonder Boy* series, *Wonder Boy In Monster World* for the Genesis, was primarily overseen by Michishito Ishizuka. While it's a non-linear action-RPG similar to *The Dragon's Trap*, it's missing the assorted animal transformation. Nevertheless, the game features a number of throwbacks and references to all of the previous games in the series.

While development was taking place on *Wonder Boy In Monster World*, Nishizawa was hard at work on an arcade game called *Tokei Jikake No Aquario*, which has since been translated as *Aquario Of The Clockwork*. The game was developed for the Sega System 18 board and was a multiplayer action game with auto-scrolling levels, similar to *Monster Lair*. Enemies could be knocked unconscious by hitting or jumping on them, then could be tossed around the screen.

Aquario Of The Clockwork was the last arcade videogame developed by my company. I had been working and suffering for a long time to complete it, but the location test results were poor. It was an ▶

WHERE ARE THEY NOW?

Ryuichi Nishizawa is one of the co-founders of Westone, and often got his hands dirty in both coding and designing its games. He is still president of the company. Many of the long-time members have moved to different companies. The other co-founder, Michishito Ishizuka, left Westone in the mid-Nineties and went to work for Matrix Software, the development house behind *Alundra*, the *Final Fantasy III* remake and *Final Fantasy: The 4 Heroes Of Light*. Shinichi Sakamoto, the composer of many of Westone's games, is now a producer at Media Vision, the company that previously developed the *Wild Arms* series for Sony, though unfortunately he no longer composes music. Maki Ohzora, a graphics designer and character illustrator, is a prolific artist and drew the artwork for the goofy comedy *Evangelion* spin-off manga *Petit Eva: Bokura Tanken Doukoukai*.



THE DNA OF... WESTONE 8BIT ENTERTAINMENT

Constant Innovation
With six games in the core *Wonder Boy/Monster World* series, none of them are entirely alike, ensuring that gamers are treated to many gameplay experiences.

Colourful Character Designs
The characters in Westone games, particularly *Wonder Boy/Monster World*, are colourful, wide-eyed and full of energy.

Action Role-Playing
Wonder Boy In Monster Land was one of the earliest games to combine RPG elements. Many later Westone games and titles from other companies followed suit.

Excellent Music
Shinichi Sakamoto is consistently excellent composer, and all the soundtracks are of extremely high quality.

Memorable Sound Effects
The cartoonish 'whacks' of enemies taking hits, the chimes of bouncing coins – the distinctive sound effects have a personality of their own.

Expert in Many Genres
Outside of the *Wonder Boy/Monster World* games, Westone has created sports games, traditional JRPGs, run-and-guns, dating sims and many more.

Sense of Humour
In the *Monster World* games, you can buy alcohol to get hints, get passwords from purple smoking pigs and play spooky quizzes with the Sphinx.

Hugely Influential
Many games follow in *Monster Land*'s footsteps, including Namco's *Legend Of Valkyrie* and *WayForward*'s *Shantae*.

"It's because I got absorbed in Wizardry... I wanted to combine RPG elements with an action game"

NISHIZAWA ON THE ROOTS OF MONSTER LAND

▶ eccentric action game with three-player simultaneous play. The graphics were quite excellent, but it was not released, unfortunately."

Nishizawa was able to obtain the ROMs from the company's archives, and has been working with emulation house M2 to reassemble them in working order. Unfortunately as of press time, the game has not been able to be restored to full functionality, although Nishizawa was able to dig out some of the sprites from the game's source code. The soundtrack, composed by Shinichi Sakamoto, was also released digitally through the Japanese website E-GG Music.

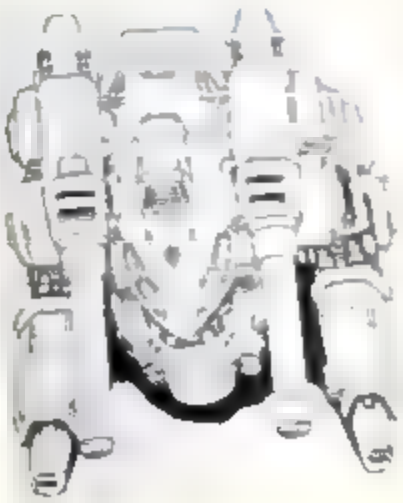
Nishizawa returned to the *Wonder Boy* series (in a manner of speaking) with *Monster World IV*. The reason why 'Wonder Boy' is no longer in the title is due to the change in protagonist – the hero is now a green-haired girl named Asha – and the game world is closely influenced by Middle Eastern styles.

Nishizawa explains the change in the leading role: "Because of the constantly changing nature of the series, it was necessary to come up with something new and different from *Wonder Boy in Monster World*. With the best of intentions, I wanted to betray the expectations of the fans but in a good way. About the protagonist becoming a female: there were some pros and cons – some from within the team – but I was glad to change it to a girl. Asha's running animation is incredibly adorable."

Sadly, Sega decided not to release the title outside of Japan. Even Nishizawa is not sure of the reason: "At that time, Sega of America and Sega of Europe just decided not to sell it. They may have thought it would not have been commercially successful. Alternatively, there may have been other big titles at the time, and they may just have been too busy."

Outside of the *Wonder Boy/Monster World* titles, Westone also worked on a handful of other titles during the 16-bit era. Amongst the most interesting was a Super Famicom RPG published by Enix called *Dark Half*, where the viewpoint is split between two characters: the noble hero and the demonic super-villain. Nishizawa has some interesting stories to tell surrounding the game's development.

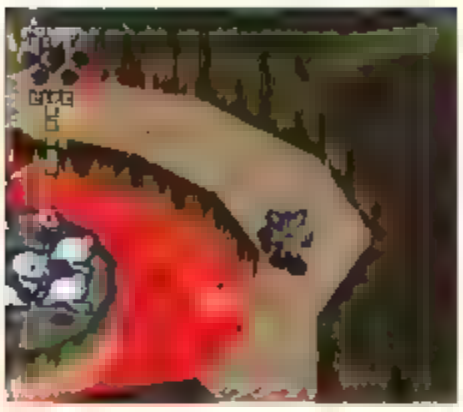
"The development of *Dark Half* was very memorable for me. It was the first time we worked with Enix, and there were many meetings. Yutaka Hirata was in charge of planning this game. He devised the idea of playing as an evil overlord. But in the middle of the development period, the game wasn't as fun as we'd initially hoped it would be. To solve this problem, I joined the project midway through. In addition to slightly modifying the game systems, I rewrote all of the scenarios from scratch. To complete this in a short period of time, I locked myself in a conference room in the Enix HQ for one month. I was always together with Watanabe-san, a producer at Enix. We ate lunch and dinner with each other every day and we became friends at this time. With his help, I was able to complete the scenario. That's the first and last time I ever wrote seriously on a game's scenario."



▲ A sketch of the Transom, the walking tank from *Asha!*

▲ [Mega Drive] Monster Boy: The Dragon's Trap isn't quite as good as *The Dragon's Trap*, but it's still a solid action-RPG.

▲ Just shy of wombat fans, *Willy Wombat*, a comical anime-inspired game, remained a Japanese TV exclusive.



Westone's next title for Hudson was *Willy Wombat*, an action game with artwork by famed *Famitsu* illustrator Susumu Matsushita. "The concept was to create a hero that didn't take himself too seriously. So, the image we wanted was 'Sonic plus Batman'. It blends 2D sprites with 3D environments into a platforming game with an overhead perspective."

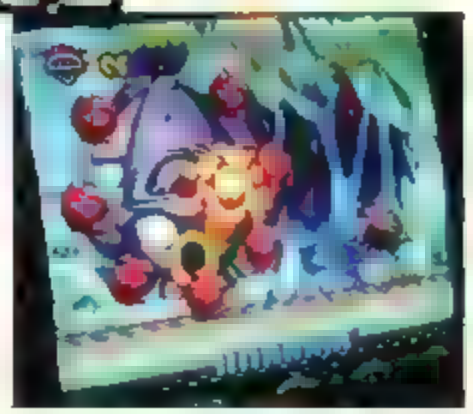
The game was the company's first 32-bit title, but it didn't originate like that. "Initially it had been developed as a side-scrolling action game for the SNES, but since the market began to shift from 16-bit to 32-bit there was a change in the development policy, and so it was reworked for the Sega Saturn." Alas, despite having full English voice acting, Hudson opted not to release *Willy Wombat* outside of Japan.

Unfortunately, most of Westone's games after *Willy Wombat* were not released outside of Japan either. After developing the adorable *Milon No Arubaito Collection* for the PlayStation, the company specialised mostly in anime spin-offs like *Akihabara Dennougumi Pata Piest Digi Carat Fantasy* and *Neon Genesis Evangelion*. *Ayanami Raising Project*, as well as *Marriage* and the *Graduation* series for 32-bit platforms. These being mostly dating sims and dating games, they were of little interest to non-Japanese gamers. Of these later releases, the only one localised was *FishEyesWild* for the Dreamcast, which was published by Natsume in North America and retitled *Reel Fishing Wild*.

In addition to videogames, Westone also developed a number of toys for Takara. The most interesting of these is a device called Bowlingual, which translates dog barks into human language. This was accomplished by sampling dog barks under certain conditions, then using these to interpret what the user's dog might be trying to tell them. Although some have questioned the accuracy of the device, it was impressive enough that *Time* magazine awarded the device as one of the best inventions of 2002.

Nishizawa reminisces about some of his company's best games. Amongst the *Wonder Boy* titles, his favourite is *The Dragon's Trap*. "I loved it so much I made it twice," he says, referring to the Game Gear port. He also expresses a fondness for *Aurail*. "The music and the 3D scenes of *Aurail* are some of my favourites. I modelled the 3D characters myself and it was a challenge to display a game in 3D. I also liked *Mirano No Arubaito Collection*. I wanted to work on a game with 2D animation, while the game market was focussed on 3D. It didn't sell at all, but I created a t-shirt. This t-shirt is supposedly an extremely rare item, but I couldn't find any images of it on the internet."

Unlike many larger companies from back in the 8 and 16-bit era, Westone is still active. "We have been working on social games for use on smartphones for the Japanese market. We are not doing any original planning. We are also involved in website operation and maintenance," reveals Nishizawa. However, the company's presence has made it easy for its titles to reach digital download services.

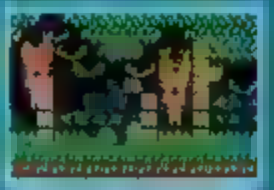


▲ [Arcade] The only known screenshot of *Aquales Q: The Clockwork*, is an old photograph from a Japanese blog describing the plot-line.

DEFINING GAMES

Wonder Boy

Wonder Boy III: The Dragon's Trap

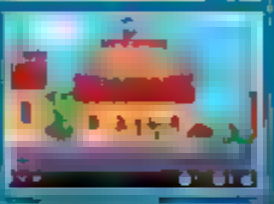


Monster World IV

While the RPG aspects of its... light puzzle solving, *Monster World IV*... arguably some of the prettiest visuals available on the Mega Drive!

Aoi Blink

Based on the anime series by Osamu Tezuka, this PC Engine title has the player controllin... characters acting as shadows similar to *Ninja*... fooled from the Kiri...



Mashin Eiyuuden Wataru Gaiden

An action-RPG based on the *Mashin*... for like *Wonderboy III: Monster*...

Riot City

Riot City has... most beat-'em-ups. Released in the arcade... and later ported across the PC Engine... the time, it was a... shameless spin...

Dark Half

A collaboration between... *Dark Half* features... Granted wishes by slaughtering innocent villagers... Impressive graphics and... ghost ship hell...

Blood Gear

This 1994 PC Engine... produced with Red Entertainment... side-scrolling mecha action-RPG that is... to *Sapiens Dens Mk II*... variety of ways...

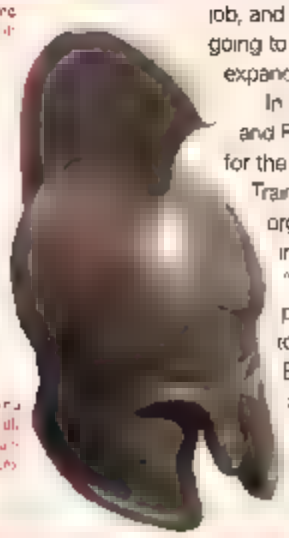
Milon No Arubaito Collection

This PlayStation title is a series of simulation... and mini-games featuring a cutesy girl in a... small town. The 2D animation is gorgeous, and... it begs you to wonder what a *Wonderboy*... would've looked like on 32-bit systems...

THE WAR LORDS

MC LOTHLORIEN

If you had picked up a wargame from your local software shop in the Eighties, the chances are it would have been released by the generals of MC Lothlorien. We spoke to Mike Cohen, co-founder of the Manchester-based company

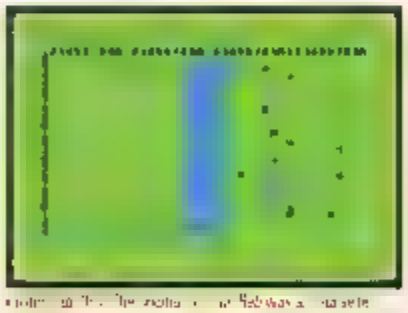


One of the extraordinary facets of the games software explosion of the early Eighties was the relative inexperience of many of the people involved.

Very few computer courses existed, often programmers came direct from university or were even still in education. The men who formed the software houses themselves usually had business experience but very little knowledge of the product they were actually selling. They had to learn on the job, and learn pretty quickly if they were going to take advantage of a rapidly expanding market.

In the late Seventies, Mike Cohen and Roger Lees were working for the Road Transport Industrial Training Board. "It was a great organisation and a very big thing in the Sixties," remembers Mike, "and Roger and I essentially provided business consultancy to the relevant small companies. Eventually the two men had a growing feeling that having spent much of their time telling others how to run a business, perhaps they should have a crack themselves. "We basically thought we really ought to be putting our money where our mouth was," says Mike.

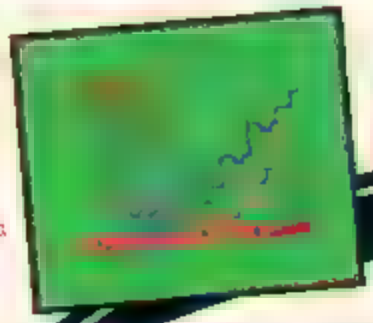
We are sitting opposite Mike Cohen inside Manchester's voluminous Event City where the second Play Expo is currently in progress. Surrounded entirely aptly by numerous home computers from the last 35 years, Mike can't stop grinning. Makes me



IN THE KNOW

- MC Lothlorien was formed in 1982 as an amalgamation of Mike Cohen's MC Associates and Roger Lees' Lothlorien Trading.
- Mike Cohen's first computer was a ZX81 bought for him by his wife for Christmas 1981.
- Lothlorien's first published games were ZX81 and Spectrum versions of *Tyrant Of Athens* and *Warlord*, coded by Mike and Roger respectively.
- The famous Lothlorien helmet was based on a Corinthian design; the huge replica displayed at Micro Fairs was actually a cheap and inaccurate version purchased in an Athens flea market by Mike Cohen.
- Mike and Roger employed a marketing company to design their various multi-coloured logos as Actionmaster.
- Simon Cobb's *Grid Patrol* was a more complex version of his own *Di-Lithium Lift*, which was published by Hewson Consultants.
- Joan Design's Ardwick office housed Lothlorien's computer training school for programmers and was run by David Haynes.

THE DNA OF... MC LOTHLORIEN



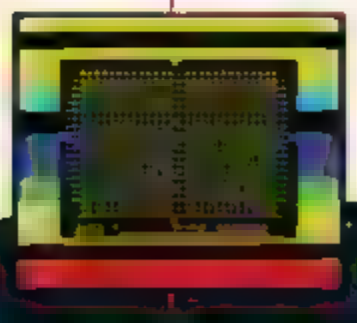
Battle Experience
Roger Lees and Mike Cohen had been playing tabletop wargames since the Sixties. They knew what made a good wargame tick.

This advert helpfully informed a potential customer which year each game was just in!

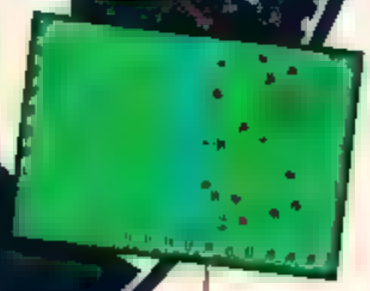
From Publishing to Developing
When publishing became much more capital-intensive in the late Eighties, Lothlorien became developer Icon Design Ltd, producing many games for budget king Mastertronic.

Business Acumen
With experience working for the Road Transport Industrial Training Board, Roger and Mike knew how to make a business work, although sadly even they couldn't overcome the end of the 8-bits.

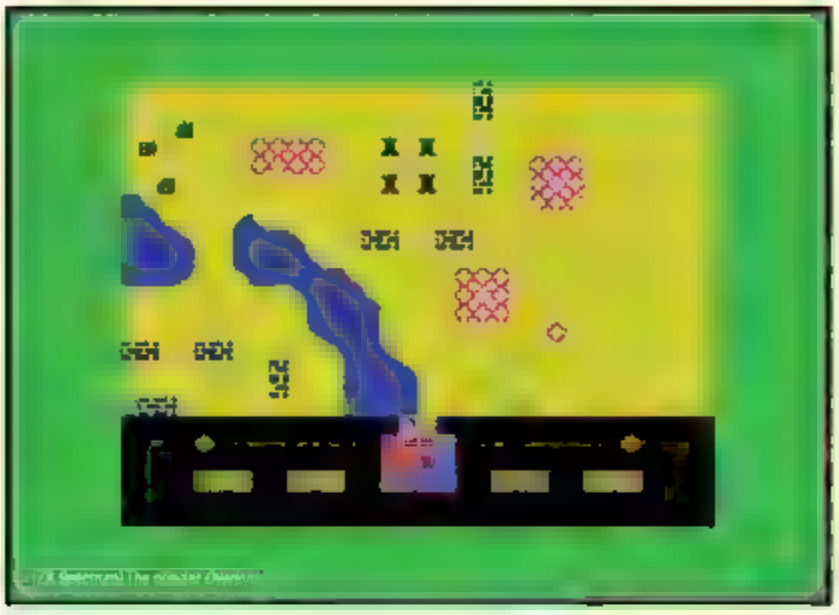
Branching Out
Despite finding a good niche in Wargames, Lothlorien realised early on a needed an arcade range if the company was to survive.

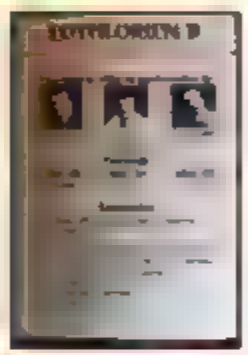


Know Your Weaknesses
A key factor in battle and in business; Mike and Roger were aware of their shortcomings technically and as salesmen. A technical director (Geoff Street) and coders were swiftly hired as was a marketing partner.



Know Your History
The two men also had a deep interest in history, particularly Ancient Greece. Mike Cohen and the American civil war, Roger Lees.





WHERE ARE THEY NOW?

Roger Lees

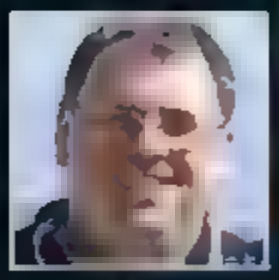
Now retired, Roger returned to business consultancy after Lothlorien folded.

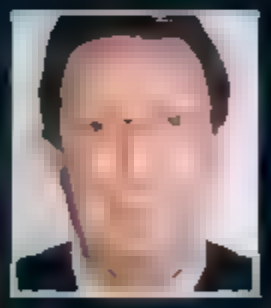
Steve Hughes

After parting ways with Lothlorien, Steve worked for Binary Design. Today he's involved in business software, chiefly for the NHS.

Mike Cohen

After the collapse of Icon Design, Mike focused on his law career, and remains in practice today as a director of The Family Mediation Practice Ltd in Manchester.





David Bolton

The master coder behind *Johnny Reb 2* moved into business software, developing oil trading software for Morgan Stanley among other projects. Today he works as an independent contractor.

Roger Womack

Roger is still coding today after having found himself at home with football management simulations. He currently runs his own company, Sports [illegible], whose main seller is *Football Director*, available on iOS, Android and PC – all versions programmed by Roger himself.

Steve Riding

Steve has enjoyed a glittering career in videogames that began with Lothlorien. He joined Psygnosis as a producer, eventually ending up as director of all external development. After that he started Traveller's Tales before building up another company, Lockwood. He has recently set up a new company, working on a well-known IP.

feel so old, all of this," smiles the bespectacled and smartly attired former owner of the strategy and wargame software house. "But it's so great seeing all these old machines again and still working." We've taken the opportunity to meet up with Lothlorien's co-founder in Manchester as he lives just a few miles away from the venue. Tomorrow we shall conduct our interview at Mike's club in the nearby city centre, but for now, like the rest of us, he's enjoying the radiant glow of pixelated nostalgia. We spot two young lads staring bemusedly at a Sinclair ZX81 and point them out to Mike. "That was Roger and I 33 years ago. We weren't technically minded and started from scratch as it was all alien to us. But we were looking around for a business to start and we thought there might be something in it."

Roger and Mike met at Grammar school in Manchester at the age of 11. The boys quickly discovered a shared passion for wargames and would soon be standing on opposite sides of various miniature battlefields. "I had a 20-33mm sized model army based on Alexander the Great's Macedonian army," remembers Mike, "so I usually took the Greek side and Roger the Persian, playing to actual wargaming rules." We ask Mike where the considerable fondness for Ancient Greece comes from. "I haven't a clue," he laughs. "I guess at school although my first degree was in science. But I remember being quite into it from an early age and often when I was in a physics lesson I was reading up on the Peloponnese war instead."

Many of the companies Mike and Roger were assessing had already started to think about the potential of computerised accounting. "We didn't know a thing about computers but we thought from a credibility point of view in terms of our role that it would be a good idea to at least have a rudimentary knowledge," says Mike. Rather than attempting to create a complex piece of business software, the coding initiate sensibly opted to try and create some type of game instead. But where to start? "I thought about what I liked and my hobbies and I used to play a lot of tabletop wargaming," explains Mike.

And very often one of the problems was that you couldn't get an opponent to play against. So I reasoned, I should teach myself to learn how to program in BASIC and then try and create a wargame of some description."

We are now sitting opposite Mike in a fifth floor room of his club in central Manchester, the chink of our coffee cups echoing around the wood-panelled walls. The steady manic buzz of the Play Expo seems a world away from the quiet peacefulness of the stately home-esque room. "What I started to work out was actually just a simple strategy game," continues Mike, "you could hardly really call it a wargame. It was only really a means of teaching myself BASIC." Drawing on his love of ancient Greek mythology, Mike created the game *Tyrant Of Athens* for the ZX81. "It took me a couple of months, working evenings in my dining room. At the end of it I felt I'd achieved

Micro Adventure dominates this Lothlorien stand at ZX Microfair while *Two-Gun Turtle* leads. Extra kills if you can guess whose stand is next door!

Two nice ladies from Lothlorien's agency pose in front of its stand at a ZX Microfair.

something because on the way I'd learned a little bit about computers and created something that was a bit of fun." When Mike showed his creation to some friends, they asked if he'd thought about trying to sell it. "It was about the time when people were selling games through mail order, mainly by advertising in magazines," notes Mike, "but I thought it was ridiculous. They persuaded me though and I went for it and placed an ad. I estimated that if I managed to sell 20 copies at a fiver each then it would pay for the advert and really feel I'd achieved something."

Mike's advert, under the name MC Associates, duly appeared in *Your Computer* but not before a light-hearted argument with his wife. "Bridget thought £95 for a quarter-page advert was throwing money away," remembers Mike, the memory of this strange domestic altercation bringing a grin to his face. "So I offered her a bribe – promised her if the game made any money, I'd buy a dishwasher out of the profits." Hence the dishwasher game was born and fortunately for Mike (or unfortunately depending which way you look at it), *Tyrant Of Athens* sold 200 copies within two weeks. Mrs Cohen was presumably very pleased – as was Mike with the sales of his first effort.

Enthused by Mike's success, Roger Lees purchased a ZX81 and began coding. Using the name Lothlorien, he produced a similar text-based strategy game called *Warlord*, based on one of his own particular favourite period of history, feudal Japan. Mike had already created a follow-up to *Tyrant Of Athens*, *Roman Empire*, and it quickly proved to be even more popular than its ancient Greek predecessor. Yet despite these successes, Mike and Roger were still working separately on their games,

> **"We were looking at marketing and circulation because we were having a lot of difficulty breaking into the shops"**
>
> MIKE ON THE BEGINNINGS OF THE DEAL WITH ARGUS PRESS

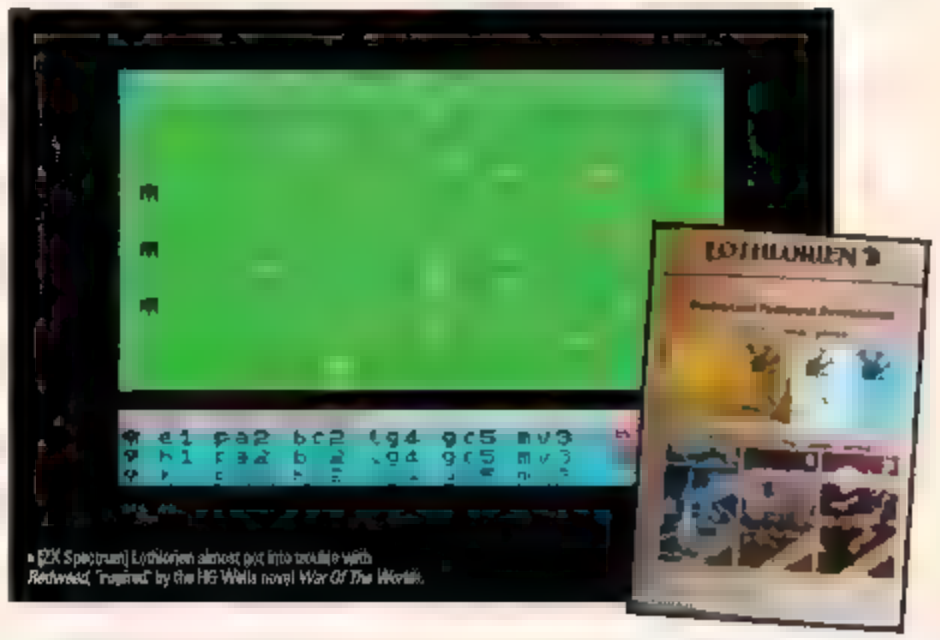
with their wives helping them to copy tapes, photocopy instructions and post the numerous packages off. Thank goodness for all that spare time saved by not having to do the washing up, we quip. Mike smiles: "I guess Bridget was the associate. She was certainly a great help." After six months of Roger and Mike working separately on selling their respective games, sales were strong enough to suggest a step forward. "We were quite busy so thought we'd either better form a company and start doing it properly or just stop and concentrate on our day job," says Mike. The two men joined forces and names. MC Lothlorien was born.

The new company began in earnest in the summer of 1982. Re-releases of Mike and Roger's ZX81 games were the first games, followed by the respective ZX Spectrum versions. But they were still working from home. "We started to become aware that there were larger volumes to be had and so we began to get our tapes produced professionally," explains Mike, "which meant I was having these huge boxes delivered to the house all the time." Clearly some dedicated premises were urgently required if Mike and Roger were to avoid divorce proceedings. "Our wives were getting fed up with these boxes and thousands of cassettes everywhere, so we bought an office in Poynton and moved the operation there, taking on a couple of programmers and secretaries. While I had been working at home I had a shorthand typist who used to come in and do my correspondence and stuff because we had no computers to do word processing back then. It seems so crazy now."

One of those early programmers was Steve Hughes who approached Lothlorien to see if they could collaborate together. "I'd written a game called ▶

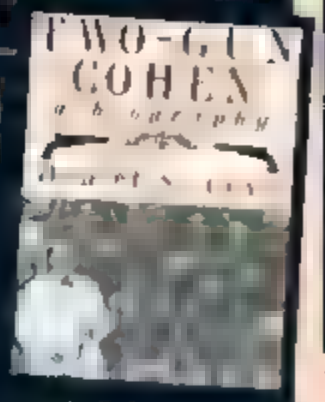
TIMELINE

- MIKE COHEN AND ROGER LEES BEGIN WORK AT THE ROAD TRANSPORT INDUSTRY TRAINING BOARD
- MIKE RECEIVES A ZX81 FOR CHRISTMAS FROM HIS WIFE. MAKES A CHANGE FROM AFTERSHAVE AND SOCKS.
- MC LOTHLORIEN IS OFFICIALLY FORMED, AN AMALGAMATION OF MIKE'S MC ASSOCIATES AND ROGER'S LOTHLORIEN TRADING.
- LOTHLORIEN BEGINS TO HIRE CODERS (SUCH AS SIMON COBB) AND MIKE AND ROGER BUSY THEMSELVES CONVERTING THEIR ZX81 GAMES TO THE NEW-FANGLED ZX SPECTRUM. GEOFF STREET JOINS AS TECHNICAL DIRECTOR.
- A BUSY YEAR AS LOTHLORIEN EXPANDS, RELEASING MANY THIRD-PARTY (AND IN-HOUSE) ARCADE GAMES AS WELL AS MORE STRATEGY TITLES.
- STEVE HUGHES LEAVES, STEVE RIDING JOINS, AS DOES ROGER WOMACK. LOTHLORIEN AGREES A DEAL WITH ARGUS PRESS TO DISTRIBUTE AND MARKET SOME OF ITS GAMES. THE BULGE IS THE FIRST.
- LOTHLORIEN SUBSUMES THE REMAINS OF A'N'F WITH DOUG ANDERSON BECOMING A DIRECTOR OF THE NEW COMPANY, ICON DESIGN.
- THANKS TO MIKE AND ROGER'S GOOD RELATIONSHIP WITH RON HARRIS (WHO WORKED PREVIOUSLY AT ARGUS), ICON DESIGN DEVELOPS MANY CONVERSIONS FOR MASTERTRONIC.
- AS THE BUDGET MARKET BEGINS TO WANE, THE WORK DRIES UP FOR ICON DESIGN AND LOTHLORIEN. OVER-EXPANSION HAS ALSO LEFT THEM EXPOSED.
- FOR THEM THE WAR IS OVER: ICON DESIGN/LOTHLORIEN CLOSES ITS DOORS AFTER AN EVENTFUL SEVEN-YEAR BATTLE.



[ZX Spectrum] Lothlorien almost got into trouble with *Redweed*, "inspired" by the HG Wells novel *War Of The Worlds*.

THE LEGEND OF MORRIS 'TWO-GUN' COHEN



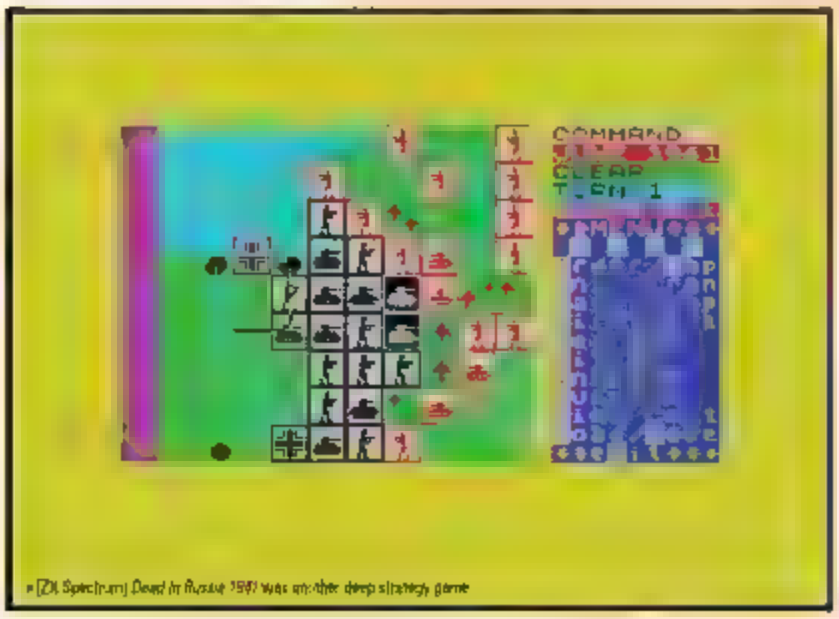
The unusually titled MC Lothlorien game *Two-Gun Turtle* was inspired by Mike Cohen's uncle, the legendary Morris 'Two-Gun' Cohen. Born in Poland in 1887, Cohen's family emigrated to London shortly after his birth. He was shipped off to Canada in his late teens in an attempt to reform his errant ways. Cohen wandered throughout Canada's western provinces and when he came to the aid of a Chinese man who was being robbed (an act unheard of at the time), his reputation within the Chinese community grew immeasurably. Post-World War One (where Cohen saw action at Ypres) Cohen found himself enamoured with Sun Yat-sen, Chinese revolutionary and one of the founding fathers of the Republic of China. Cohen became a trainer for Sun's army as well as his personal bodyguard and began the habit of carrying a second pistol, hence the evocative moniker. After Sun's death in 1925, Cohen worked for several South Chinese leaders, gaining the sinecure rank of general before joining the fight against the Japanese invasion in 1937. He died in 1970, surrounded by family, a clutch of myths and yarns and an undeniably high regard - still in his spiritual home of China.

> "We'd looked at diversification and in some ways maybe we were naive"
>
> MIKE ON MC LOTHLORIEN'S DIVERSIFICATION IN THE MID-1980S

Beetlemania and another called *Bedlam*, both for the ZX Spectrum," says Steve. "My partner at AVVA Software, which was a really tiny part-time venture, had enough so he made the contact and introduced me to Mike Cohen." Steve would soon be developing further arcade games as Mike and Roger sought to expand their roster of software. "Roger and I weren't really programmers," says Mike, "we both knew a bit of BASIC and a little more but that was it. We knew we had to do something other than strategy in order to give ourselves a little bit of a sales boost. Steve had already written a couple of games and his code was very, very good." Despite not working directly on the MC Lothlorien payroll, Steve Hughes often visited its office. "Their office was above a couple of shops and dominated by a receptionist called Arline who had a very expressive personality and a penchant for announcing she was 'shaking the dew from the lily' whenever she went to the loo," he laughs.

One of the more successful games Steve Hughes developed stemmed from an original concept by Mike Cohen. "I thought of a great idea for a game called *Micro Mouse Goes Debugging*," he grins, "where the player controlled a little mouse putting letters into sequence in order to form a program. That sold really well." Rather more problematic was the re-release of *Bedlam*: the artwork for the cover bore more than a striking resemblance to a certain heavy metal band's iconic mascot. "I can't remember who designed the *Bedlam* cover," says Mike, "but when the game was released we got a letter from Iron Maiden's lawyers almost immediately because basically the artist had copied Eddie." *Bedlam* was swiftly withdrawn from sale and the cassette inlay replaced with a distinctly non zombie-like image.

In addition to Steve Hughes, Lothlorien was also using other independent programmers, taking its submitted games and paying royalties to publish them under its brand. *Grid Patrol* was a grid-based shooter from Simon Cobb (who joined MC Lothlorien full-time as a coder). *Hyperblaster*, an *Asteroids* clone by Matthew Rhodes and *The Stolen Lamp* an obligatory text adventure, in addition, of course, to further wargames with American Civil War simulation *Johnny Reb* proving the most popular. Roger Lees was a particular fan of this era. And with its name becoming established, Lothlorien began to focus once more on the strategy genre, receiving a high quota of efforts from third parties. As 1985 dawned, Roger and Mike felt that, while they were selling some excellent games, they weren't doing them full justice. "We were looking at marketing and circulation because we were having a lot of difficulty breaking into the shops," recalls Mike. "We were looking for more volume and also a means of financing further development because we didn't have a lot of money and needed to become more capital-intensive." By now Lothlorien had a team of programmers including Dave Selwood, Peter Campoulohi and Steve Cobb, in addition to freelancers such as Steve Hughes and Roger Womack.



▶ ZX Spectrum *Dead in Russia 1941* was another deep strategy game

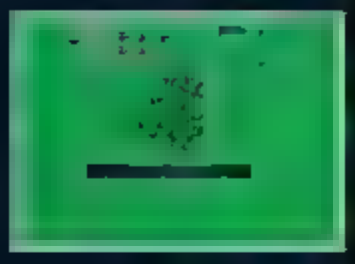
▶ Mike kept various press cuttings over the years

As a smartly dressed secretary refreshes our coffee cups, Mike leans back and reflects on a year when Lothlorien really began to open up its ambitions. "We entered into an agreement with Argus Press in London," he says, "where they took care of the marketing and distribution for some of our new games." The first game under the new arrangement was *The Bulge*, written by David Bolton of Choice Software. David recalls, "I'd done an arcade game on the C64 called *Buzzby*, but my passion was in wargames having played tabletop and board games by Avalon Hill and Strategy & Tactics since I was 13." With its colourful display, fast gameplay (for a wargame) and user-friendly interface, *The Bulge* was an instant hit and a superb start to the

DEFINING GAMES

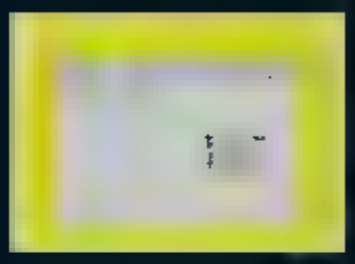
Johnny Reb 2

MC Lothlorien had already had a consistent seller with *Johnny Reb* in 1984. From an original idea by Mike Cohen and Roger Lees (who was a huge American civil war fan), it was released on various platforms to reasonable success. When it was suggested they create a sequel, Choice Software, or rather David Bolton, was given the task of updating the first game.



Tyrant Of Athens

Starting life as a ZX81 game written by Mike Cohen, *Tyrant Of Athens* was a mainly text game that saw the player take on the role of the eponymous ruler of the ancient Greek city. Set in the 5th Century BCE, it was your duty to fend of rival cities, in addition to the nefarious Persian Empire, and ultimately turn Athens into the most feared state in Greece.



Micro Mouse Goes Debugging

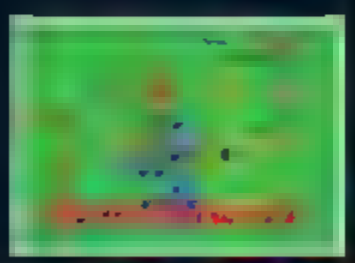
By 1983, Roger and Mike were well aware they needed to expand Lothlorien's range of genres if it was to succeed. *Micro Mouse* was an original idea from Mike Cohen where the titular mouse would need to crawl into his computer to rid it of an unpleasant virus. *Micro Mouse* was a fun, if limited game that marked the beginning of Lothlorien's arcade series.

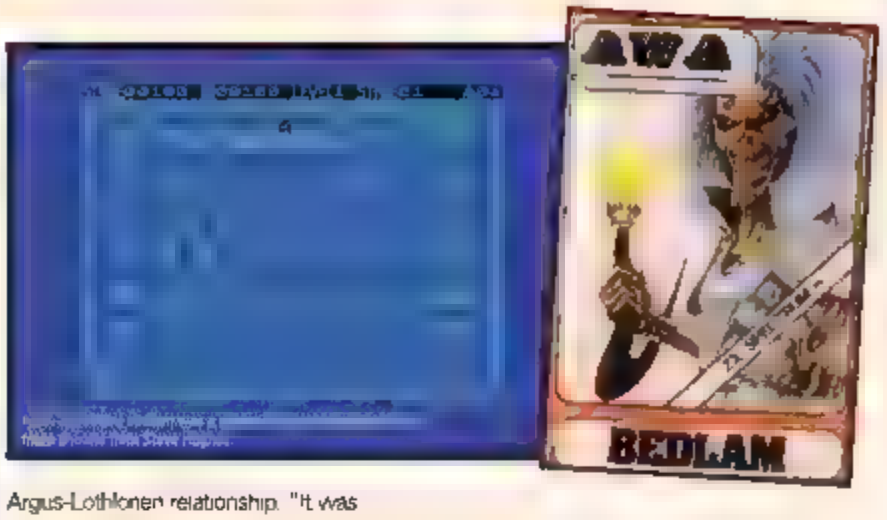
The Bulge

David Bolton's first game for MC Lothlorien was also the first in its partnership with Argus Press. Released in 1985, *The Bulge* (or *Battle Of The Bulge* as it was also known) was based around the pivotal moment in World War Two when the Allies successfully fought off a desperate and last-ditch German counter attack.

Waterloo

Lothlorien didn't confine its wargames to just ancient and modern history, and *Waterloo* simulated the battlefields of Belgium in 1815. The first impression of *Waterloo* was the hugely improved packaging that Lothlorien had forked out for, partly justifying its £9.95 price tag. Factors such as terrain, morale and some clever AI made *Waterloo* an intriguing game.





Argus-Lothlorien relationship. "It was probably a bit too difficult," admits David, "but it was a real-time game with loads of units and lots of fun to write." The coder would meet Roger and Mike in 1986, when he produced his second game for them, *Johnny Reb 2*, which secured favourable reviews. " didn't study the original or even play it," he says, "but had been playing tabletop American civil war games since was 13 So just devised a scenario and had fun programming it The AI for the units to form up and cross the river was interesting all in Z80 assembler!

We return to the wood-panelled room and Mike Despite the early success of *The Bulge*, he declares not much came of the Argus relationship, except when they were pointed in the direction of an acquisition opportunity Nearby, follow software house and publisher of the legendary *Chuckie Egg*, A'n'F had recently gone into liquidation. "We went to the liquidators, paid off what we needed to and took over the rights to their games," explains Mike "We also took on some of its staff and Doug Anderson joined us He was a great guy and a great programmer. Lothlorien bought new premises in Prestwich to accommodate staff from both companies and promoted A'n'F's Doug Anderson and Martin Hickling to director status After a brief period as Starsoft, Icon Design was created in 1986 as a new venture combining the talents of MC Lothlorien and A'n'F As was common with many smaller publishers of the era, Icon Design became principally a developer rather than publisher, coding games mainly for budget producer Mastertronic (such as the Spectrum conversions of *Kikstart 2* and *Ninja*) and other companies such as Ocean *Rastan*, and Grandslam *Peter Shilton's Handball Maradona*. Icon Design expanded rapidly too rapidly admits Mike with further offices opening in St Helens and Ardwick. Mike recalls the relationship with Mastertronic in particular with fondness. " went out to lunch one day with Frank Herman Mastertronic boss, and one of its founders, and discovered we had quite a lot in common We were both from Jewish backgrounds and made some dodgy comment wondering about whether we were related. I told Frank I'd had an uncle who had been a general in the Chinese army and he said 'that's funny so did We never discovered precisely what the link was "

Sadly, Icon Design/Lothlorien began to struggle towards the end of the decade Unable to afford the film and arcade licences that had become common, and lacking the expertise to compete in the new 16-bit market work from Mastertronic dried up as it focused on its new Sega deal. "We'd looked at diversification and in some ways maybe we were naive," says Mike, shifting uncomfortably in his seat, " m not sure there's much we could have done differently or better except perhaps have more technical staff earlier than we did." A significant issue for Lothlorien was the way in which its strategy games sold compared to other genres "We never had any particularly 'big' hits, but the sales would continue for some time. After all, it was a niche market so if someone wanted to play a computer version of *Waterloo* for instance, there wasn't a lot of choice

Mike and Roger attempted to make the closure of Icon Design as painless as possible for its employees " think we had regrets about the way it finished," he adds, "and it was very stressful at the end as we were responsible for a lot of people's incomes But we had some good fun and I believe we did achieve something and most of the people who worked for us went on to make a success of themselves. And don't think you can have a much greater legacy than that" ★

Our thanks to Mike Cohen, Steve Hughes, David Bolton, Roger Womack and Steve Riding.

鉄拳 TEKKEN

One of the trailblazing 3D fighters of its time, the Tekken series continues to pack a punch to this day. We went head-to-head with series producer and director Katsuhiro Harada to learn about the origins of the King Of Iron Fist Tournament

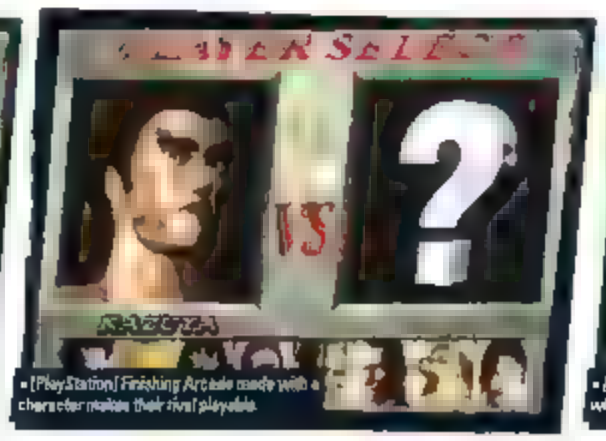
If there's one thing we've learned over the years, it's that there's no tangible benefit to being first to the party in the technology market. But Sega, more than any other company, seems to have suffered from failing to recognise this trend.

Saturn beat PlayStation to the punch, but Sony still dominated the generation through clever marketing and better third-party support. Dreamcast versus PS2 was a similar story, with many skipping Sega's dinky white classic to wait for the follow-up to a proven success. And even when it came to ushering the one-on-one fighting genre into the third dimension, Sega was once again first on the scene with *Virtua Fighter*. But with a novel gimmick in its one button per limb configuration and the good fortune to back the more popular console, Namco's *Tekken* series would come to be the very definition of what a 3D fighting game should be.

With the industry shifting rapidly from 2D to 3D at the time, it's no real surprise that excitement was so high around games like *VF* and *Tekken* – that extra dimension offered fighters unprecedented tactical options while showing off the latest tech beautifully, although we were surprised to hear that *Tekken* was originally designed around the latter rather than the former. "*Tekken* was a project to develop technology for use in 3D character animation, rather than as a 3D fighting game," reveals series overlord Katsuhiro Harada, the veteran producer and director who has been on the series since it began. "We reworked the game drastically around *Tekken 3* to make it more of a proper 3D fighting game."

Through some combination of innate skill, blind luck, experience and novelty value, though, everything came together to make *Tekken* seem like one of those glimpses of the future – a moment where you see past a game's problems and appreciate it for what it means for the next era of gaming. Or, in this case, just a supremely enjoyable early 3D fighter at a time when nobody else had really stepped in to show the world how the genre was supposed to be done ▶

• [PlayStation] The view select option was only really there to show off the 3D visuals.



• [PlayStation] Finishing Arcade mode with a character makes their rival playable.

• [PlayStation] King only came into his own when Namco gave him his chain throws.

▶ [PlayStation] A perfection on the Galaga shooting game unlocks a secret character.

▶ Going back to it today, the original *Tekken* (and indeed to a lesser degree the second one too) does feel rough around the edges, but with so many less capable teams putting out horrible 3D beat-em-ups to try and cash in on the new craze, *Tekken* would only have felt even more accomplished by comparison. "Rather than being well received as a fighting game, was well aware that games of that era were more highly regarded for the 3D polygon and other graphics technology," Harada tells us, pinning a lot of the game's early popularity on it being the right kind of graphical showcase in the right place at the right time.

Namco was locked into that right place from an early stage, its arcade division developing boards based on PlayStation technology before the platform had even been released to prove itself. "There wasn't another option to consider," Harada confirms. "Most people knew that platform as PlayStation, but we developed the PlayStation hardware-compatible arcade board, System 11, along with SCE before the release of the PlayStation." A risk then, but a calculated one and with PlayStation the strongest of the then-forthcoming consoles in terms of 3D tech – the route Namco was exploring with games like *Ridge Racer* and *Tekken* – the team simply latched onto the most obvious partner. Which, as the history books will tell you, worked out pretty well. Whereas even established greats like *Street Fighter* and *The King Of Fighters* would struggle to find their footing on PlayStation, Namco read the market brilliantly and as such had a fighter at the forefront of Sony's revolution to make gaming cool.

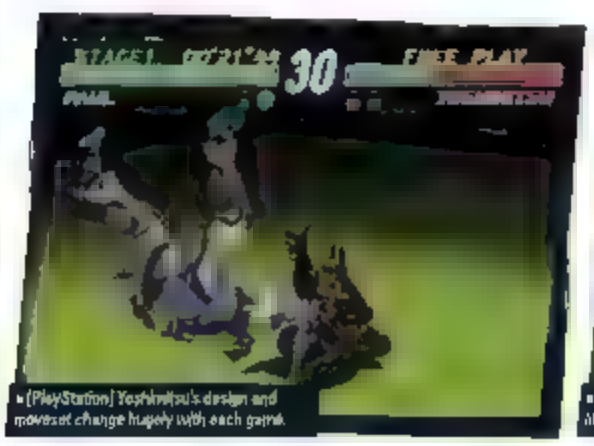
From an outsider's perspective, it seems to be an extremely competitive market, but Harada is quick to downplay this. "If asked whether there is a rivalry with other fighting games, maybe most won't understand this, but in the arcade game sector we are rivals but also comrades," he reasons. "For companies that operate arcades, not only do you need your own games to be successful, but also those of rival companies as well. That's why they are more like brothers-in-arms rather than rivals. It shows lack of understanding when people try to say there is rivalry or bad blood there. Often, events for several games are held at the same time." Perhaps it's less a competitive scene and more a somewhat symbiotic one, then – each fighter needs others to succeed as well in order to maintain popularity and awareness for the genre as a whole. "Even if someone feels hostile towards a rival, that just shows their own shortcomings. That said, it is entertaining as a performance," he chuckles, as we recall his staged spats with *Street Fighter* boss Yoshinori Ono in the lead-up to the launch of *Street Fighter X Tekken* – for all the trash talk, cosplay, hashtags and other daft feigned rivalry there, the pair were always complimentary of one another's work when asked directly.

As much as the market may have changed a lot in the last 20 years, Harada himself doesn't seem to think he has. "I've just gotten older, I think," he smiles. "My role hasn't changed that much. Perhaps going to the arcade to promote the game and for the events is something I don't do anymore. In regards to marketing and PR, conceptual design, game design and project management, these are some of the roles I have always had. I've been a bit bossy, even when I was young."

▶ [PlayStation] Jack will always get battered by faster characters. So, everyone else.

"We make at least as much, if not more, from our arcade releases of Tekken"

Katsuhiro Harada, Bandai Namco



▶ [PlayStation] Yoshimitsu's design and moveset change hugely with each game.

▶ [PlayStation] How far can you get on one life gauge? Zero wins ain't the best record.

Given the enormous popularity of *Tekken* both in arcades and on PlayStation, a sequel was always on the cards. Indeed, *Tekken 2* was one of the most anticipated titles of the early PlayStation era, with the kind of magazine coverage and pre-release buzz that you seldom see for a franchise which is only one game old. With that in mind, it's odd to hear that Namco was still going at it from a very tech-minded point of view. "It was basically decided by focusing on what new technology we wanted to implement," recalls Harada when discussing the approach to creating the second game. But it wasn't all polygon counts and bullet points – gameplay still counted, as anyone who has played the improved sequel will recognise. But the PlayStation audience was still too young to be trusted, so Namco took gameplay advice from a more established, reliable source instead. "Regarding the game as a fighting game, we based our decisions on feedback from questionnaires in the arcade," states Harada.

"The arcade is a very severe market," he continues. "Consumers only pay you 100 Yen at a time to play. You don't get 50 dollars right away – you have to have them keep coming back. That means your game has to be extremely fun to survive. Fighting games raised in this environment are more entertaining and more balanced as a result." Even so, it's a tough market to crack from this angle today, with the cost of console development alone being prohibitive enough for many smaller teams before you even factor in anything like arcade boards. Plus, there's the small fact that the arcade scene isn't what it used to be, though Harada doesn't seem to see this as a worldwide problem.

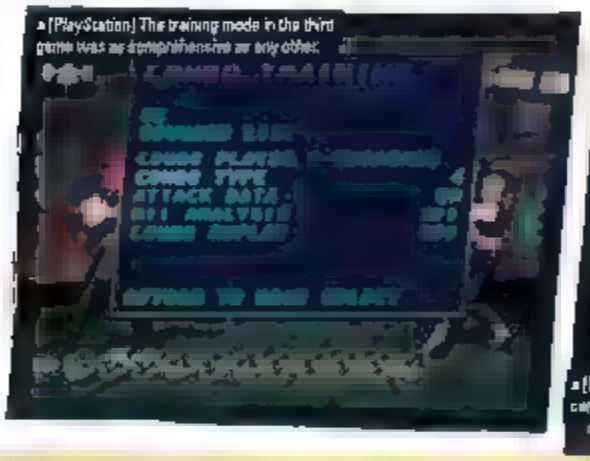
"Many people say arcades are dead," he muses. "Maybe in the West, that is somewhat true. But they are still around in the Eastern hemisphere, especially Asia. They are even increasing in South-east Asia. Console releases of *Tekken* sell millions of copies each so you might think it is quite lucrative, right? Maybe even more

than the arcades? But, that is not true. You only receive 50 dollars for a console title, maybe up to 100 including DLC, and then you're done. But hit games in the arcade keep on performing. We make about as much as the console release when we sell the initial game and arcade cabinet, but then keep profiting as the game continues to perform in the arcade. Most people don't know that we make at least as much, if not much more from our arcade releases of *Tekken*. Are you surprised?"

Yes. Yes we are, actually, but we're even more surprised to hear that the money made here is poured right back into the franchise in the form of console extras. "The revenue gained from the arcade is then invested into the development of the console version," reveals Harada. "That is why compared to other fighting games, *Tekken* is able to have more bonus modes, customisation features, bonus BGM and additional characters at no added cost to the consumer. So many console consumers often never realise the benefit they are receiving from *Tekken* being in the arcade. That is basically why we develop in this cycle. That's probably also why *Tekken* has survived for 20 years now."

Even though *Street Fighter X Tekken* promotion is long since finished, Harada can't seem to help but take one last friendly pop at Ono in summarising his argument. "One of my favourite franchises, the *Street Fighter* series, didn't see a new instalment for ten years in between *Street Fighter III* and *Street Fighter IV*," he recalls. "However, we are also an arcade operator, so we were able to generate revenue to keep updating the *Tekken* franchise with new instalments. That's essentially why *Tekken* has generated the most income in the arcades in the past 20 years of any fighting games, and sold over 43 million console copies worldwide, making it the most successful fighting game franchise. I think that proves the strategy chosen was the correct one."

As the smug grin subsides, we move onto the third game, one widely renowned as one of the best of its time. As previously stated, it was around this time that Harada and his team really started to focus on gameplay to the same degree as presentation and it shows there's a level of depth here that arguably wouldn't be beaten until *Virtua Fighter 4* rolled around some time later. It's the best performer out of all of the *Tekken* games too, but is it the best? Harada offers a surprisingly diplomatic response, considering we've effectively just asked him to review his own children. "*Tekken 3* did very well in the arcades, and sold well for many years on the console," he says. "The console sales ended up being 8.3 million copies. If you just look at the numbers, I guess you could say *Tekken 3* was the most ▶



▲ [PlayStation] The training mode in the third game was as comprehensive as any other.

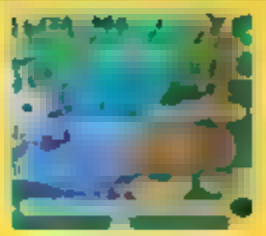
▲ [PlayStation] Let's a flashy fighter, but has can master his confusing multiple stances.

GET THE PRIZE

A handful of the other crazy tournaments from the rest of gaming

SUPER MARIO KART

■ We've seen just how keen residents of the Mushroom Kingdom are to try out all kinds of different pastimes, but you'd think the governing body behind this racing tournament would screen its drivers – known criminals, kidnappers, vandals and hoodlums are as free to compete as the squeaky clean guys.



RIBBIT KING

■ The world is running low on fuel. The solution? Give away what scraps remain as prizes in a interplanetary Froff competition. What is Froff, you ask? It's golf played with frogs rather than balls, the little croakers hopping around of their own accord after a shot. This PS2/GameCube oddity is a technical mess, but it's a riot in multiplayer.

UNREAL TOURNAMENT

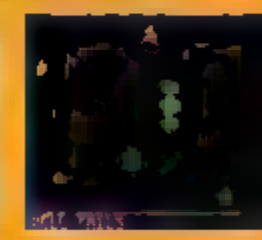
■ There's a delicious aftertaste of irony in the fact that a game based around a virtual sports event for the pleasure of others became one of the first major games on the eSports scene. Few players will remember the premise, though, because it just simply doesn't matter. It's just a damn fine multiplayer shooter.

POKÉMON

■ The rules aren't quite as well defined here as they are for most competitions – it seems to be the case that whoever beats the Elite Four and the reigning champ gets to call themselves the champion, even though the king's never actually dethroned. Still, that epic journey to catch 'em all and beat the best is one we could (and do) play over and over.

FINAL FANTASY X

■ Battle tournaments are commonplace in role-playing games, but this is something quite different. While Blitzball wasn't the primary focus of *FFX* (or at least wasn't meant to be – curse our addictive personalities), Tidus's back-story and the rewards from playing made grinding out entire seasons essential for a 100 per cent run.



CHAOS

■ The Wizard's Duel in *The Sword in The Stone* has nothing on this. Julian Gollop's Spectrum masterpiece pitting up to eight wizards against one another in the ultimate test of wits, cunning and Gooey Blobs. Crowdfunding on a brand new Chaos game has not long begun – hopefully, we won't have invested too much in an illusion this time.

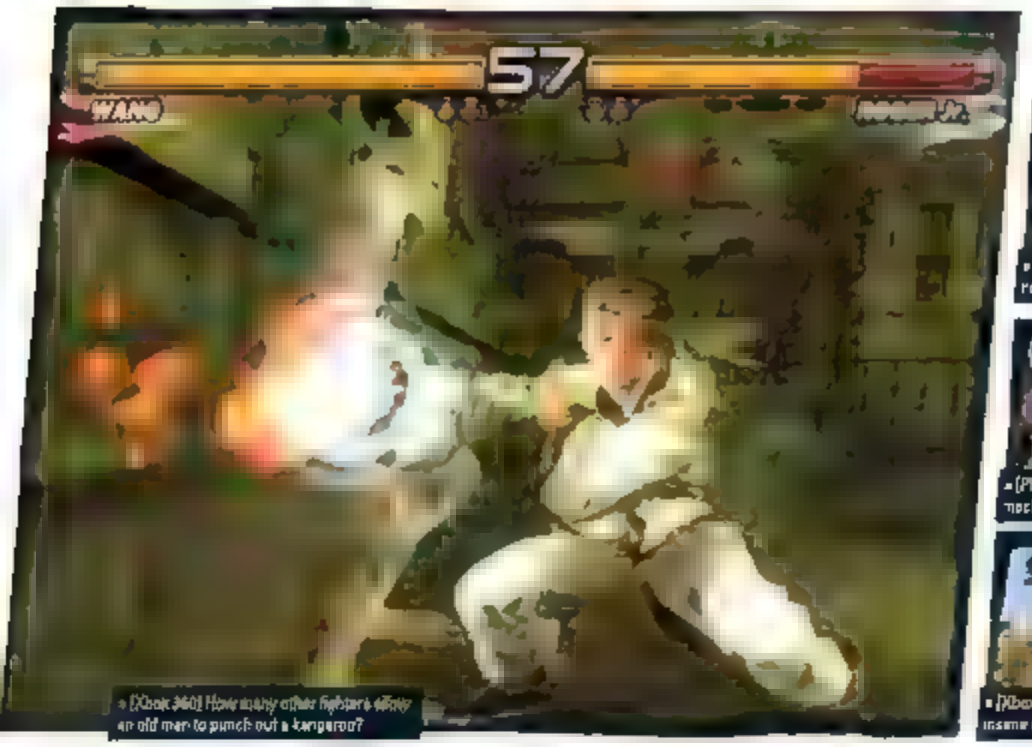
successful. I have a lot of good personal memories from that instalment as well. That said, I don't consider it as the best *Tekken*. *5* and *6* were also quite successful and well received. They even maintained the top spot in the arcades for five consecutive years."

As you can probably gather, Harada won't offer a personal favourite, rather reasoning that he learns from creating each iteration. *Tekken 3*'s assortment of odd extra modes, from bizarre mini-game Tekken Ball to chicken-flavoured side-scrolling mode Tekken Force, offered value far beyond the simple arcade ports that were common, and were as we've now learned funded by the game's coin-op success. But what was it that made the team want to give something back to the community like this? Harada's answer is succinct.

"The omotenashi (hospitality) mentality of Japanese," he states. "At the time, Namco was raking in money and arcades were doing extremely well. Since the consumers were giving us so much support, it was only natural to do our utmost to please them in return. This kickstarted a revolution in fighters too, with Time Attack and Arcade modes no longer enough – players demanded more, leading to console-only fighters like later *Mortal Kombat* games offering crazy amounts of single-player and unlockable content. Many of the additional modes were simply throwaway novelties, but even the most whimsical of them all had a grounding in the core fighting experience. "Tekken Ball was the result of me originally trying to make a mini-game to practice aerial combos." Harada explains. "We can process that, but any attempt to link a hardcore 3D fighting game and ten-pin bowling continues to blow our tiny minds.

No franchise can go 20 years without a disaster or ten, though, and Harada's go-to example came pretty early on in the series' life. "There's one memory that stands out," he says when asked about developmental developments. "At the time, a person who was like a leader of development quit and joined another company, taking many of the designers and programmers that had joined the company at the same time as me. I was very surprised." It's not uncommon in this industry, but we can't imagine this kind of observation makes it any easier to deal with this kind of mass exodus. "We were actually put in the position that we were unable to develop the next *Tekken* or *Soul Blade*," Harada reveals. "It took much effort to rebuild the development team. We had to redo everything, basically starting from scratch."

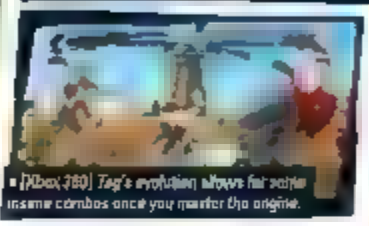
• (PlayStation 2) Marduk's ground-and-pound MMA style feels really weighty and brutal.



▲ [Xbox 360] How many other fighters allow an old man to punch out a kangaroo?

▲ [Xbox 360] Tekken Force: rubbish no matter how much better it looks on new hardware.

▲ [PlayStation 2] Tekken Tag's innovative mechanics helped it stand out at the time.


▲ [Xbox 360] Tag's evolution allows for some insane combos once you master the engine.

> **"In game development, failures often teach us quite a lot"**
> Katsuhiro Harada

This might go some way to explaining the next two games in the timeline. *Tekken Tag Tournament* was effectively a greatest hits package with a neat new mechanic, while *Tekken 4* went wildly off-template and made fundamental changes to several crucial aspects of the game, attracting a fair amount of criticism for doing so. We ask whether Sony had wanted *Tag* to be a launch title for the PlayStation 2 following the successful collaboration between the two brands the generation before, but Harada laughs off the idea. "There wasn't much discussion on whether to make *Tekken Tag* a launch title," he tells us. "That was the role of *Ridge Racer*. *Tag* just came along at the right time."

Similarly, the question of making the non-insignificant leap from PlayStation hardware to PS2 (with its all-powerful Emotion Engine) seems equally easy for the *Tekken* boss, but then he wouldn't have been the one doing the coding. "There wasn't much that we had trouble with regarding the technology," he says. "Actually, the tough part was that the number of polygons increased drastically, and we were struggling to find a way to use this increased power effectively."

But find it they did. *Tekken Tag* looked great at the time and *4* looked even better when it turned up, even if it did follow the odd mantra of 'if it's not broke, fix it until it is'. As is always the case, some gamers who hadn't really gotten on with the series in the past will tell you how much they love this one that breaks from tradition, but the majority wanted tradition back. Moving the emphasis away from juggle combos and onto spatial positioning was an interesting move but not one that paid off, although that doesn't seem to have hurt the franchise. If anything, it has actually helped. "It was because of the failure of *Tekken 4* that we are successful today," Harada claims. "In game development, failures often teach us quite a lot. That's why I think there was a lot things in that game that are worth looking at."

After *4*, it's hardly surprising that core series *Tekken* games haven't taken any risks, at least not to that level. The Rage mechanic of *Tekken 6* sails a little too close to today's odd obsession with comeback mechanics, but it's no better, worse or more effective than Garou's TOP system so we'll let it go. Both *Tekken 5* and *6* played things relatively safe, the core fighting returning to the template laid out by *3* and with all the same kind of frippery laid about around it to keep fans happy whether they were fighting or not. Customisation was the big new thing. *SoulCalibur*'s creation suite it may not be, but the dress-up mode in modern *Tekken* games is still fun to play around with all the same.

And so we come to *Tekken*'s latest outing. No, not the iOS card game, although that is surprisingly good fun. We're talking about *Tekken Revolution*, the free-to-play PS3 game that has already been downloaded by over 3 million players. It just goes to show how much the world has changed. *Tekken 3* sells over 8 million but today, Namco can only give away 3 million copies of *Revolution*, but Harada seems happy with how it's all going. "We were able to gain a lot of feedback, so I am satisfied," he states, but he does have an odd confession to make. "If I were to give my honest answer to whether fighting games are well suited to F2P, I would say no. This is because the basic game model was born in the arcade, coin operation-based environment from 20 years ago. Currently popular genres such as team battles, four-player co-op and RPGs are probably better suited. Or perhaps changing the fundamental gameplay, like in *SoulCalibur: Lost Swords*."

Even two decades on, Harada still has a passion for his franchise and a bunch of interesting new ideas on where to take it. The free-to-play experiment isn't the sign of the end of *Tekken* as we know it, as long as the arcade culture on which Namco evidently thrives is still there, we can still expect new main series *Tekken* games, only perhaps subsidised by this kind of spin-off. And best of all, two decades in, Harada still dreams big. "To create a game which everyone says 'Now that is exactly what I have been waiting for!' That is my goal," he closes.

SPECIAL MOVIES

The fighters that have tried (and failed) to take on Hollywood

STREET FIGHTER: THE MOVIE (1994)

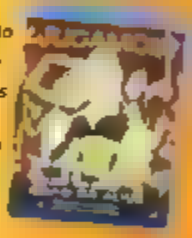
■ A classic for all the wrong reasons. With a script written by someone who had no idea about the game, Raul Julia's final role serves up the best bits. "For you, the day Bison graced your village was the most important day of your life," he taunts Chun-Li. "But for me, it was Tuesday."

MORTAL KOMBAT (1995)

■ Some fighter-based movies shy away from the hokey nonsense that surrounds the game's ludicrous canon, but *Mortal Kombat* fully embraces it and it works. It's still rubbish, obviously, but in terms of sheer fun, the *Mortal Kombat* movies are among the best examples of videogame-based silver screen silliness going.

DOA: DEAD OR ALIVE (2006)

■ The only movie here to really get its source material, *DOA* is a gratuitous 87 minutes of teen titillation thanks to sexy ladies, buff dudes and more sexy ladies squaring off in various unsuitable outfits. Jaime Pressly kills it as Tina – too bad the rest of the bunch are either terribly cast or just terrible by comparison.



THE KING OF FIGHTERS (2010)

■ Once again we turn to the casting department with a giant question mark over our heads – casting an American dude as Kyo, Maggie Q as Mai and Ray Park (aka *Star Wars* baddie Darth Maul and Toad in *X-Men*) as big boss man Rugal. We're surprised they didn't get Stephen Fry to play Terry Bogard. Perhaps he was busy.

TEKKEN (2010)

■ The characters' nonsensical back-stories and reasons for competing in the Iron Fist should make for an awesome movie before the fights even start. But director Dwight H. Little plays things a bit too straight here – this is far from the worst movie on this rundown, but perhaps the most forgettable.

ROGUES GALLERY

A cross section of Tekken's enormous cast

1 KING
F/S: Wrestling

2 CHRISTIE
F/S: Capoeira

3 MOKUJIN
F/S: Mokujin-ken

4 LARS
F/S: Karate

5 PANDA
F/S: Advanced Bear Fighting

6 BOB
F/S: Freestyle Karate

7 BRUCE
F/S: Muay Thai Kickboxing

8 ALISA
F/S: Humanoid Cyborg Combat

9 ZAFINA
F/S: Ancient Assassination Arts

10 NINA
F/S: Koppo

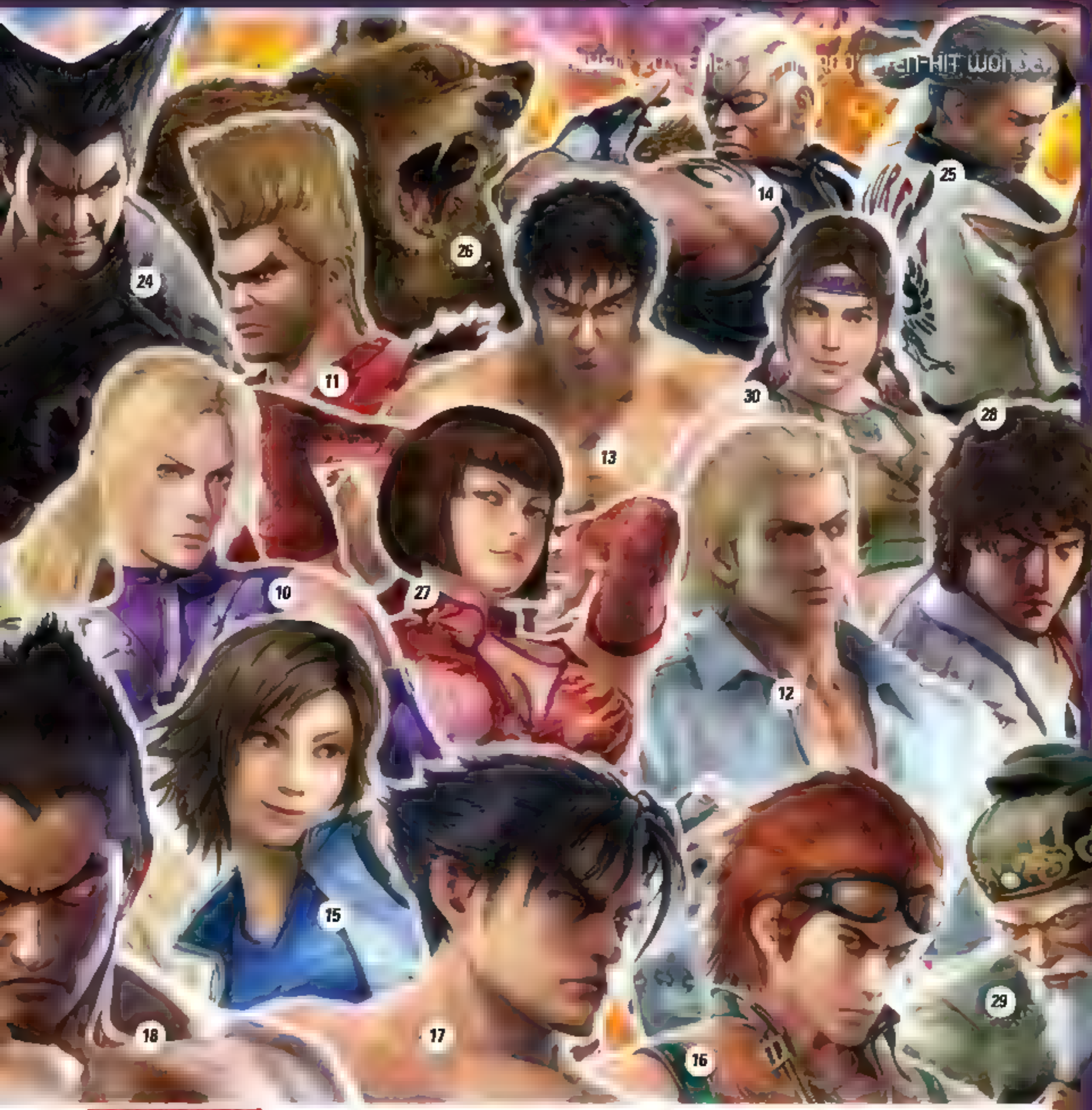
11 PAUL
F/S: Judo

12 STEVE
F/S: Boxing

13 LAW
F/S: Jeet Kune Do

14 RAVEN
F/S: Ninjitsu

15 ASUKA
F/S: Kazama Style (traditional



F/S = FIGHTING STYLE

16 HWOARANG
F/S: Taekwondo

17 JIN
F/S: Karate

18 KAZUYA
F/S: Advanced Mishima style

19 ARMOR KING
F/S: Wrestling

20 EDDY
F/S: Capoeira

21 LEO
F/S: Bajiquan

22 LILI
F/S: Street fighting

23 XIAOYU
F/S: Hakke Sho Hika Ken

24 HEIKACHI
F/S: Mishima-Style Karate

25 BAEK
F/S: Taekwondo

26 KUMA
F/S: Advanced Bear Fighting

27 ANNA
F/S: Koppo

28 MIGUEL
F/S: Brawling

29 WANG
F/S: Xing Yi Quan

30 JULIA
F/S: Kenpo/Wushu

Command & Conquer: Red Alert

» PLATFORM: PC, PLAYSTATION » DEVELOPER: WESTWOOD STUDIOS RELEASED: 1996

There's a reason Tanya has been the star of every entry in the *Red Alert* sub-series of *Command & Conquer* – she is a living rule-breaker in real-time strategy, undoing entire bases in a matter of seconds with C4 bombs that can automatically destroy buildings.

She's introduced in the original *Red Alert*'s first mission, where players get a taste of what she can accomplish when the enemy's defences are weakened, yet it's *Red Alert*'s highly addictive and ridiculously busy skirmish mode where the chaos really begins. Here, players can build entire units of Tanyas and throw the whole battle in a different direction in almost no time at all.

That's the thrill of Westwood's strongest ever strategy title really – there is very little balance to affairs outside of who has the largest army of mammoth tanks or best setup of tesla coils, yet when the battles suddenly turn in your favour, the feeling of satisfaction is extraordinary. Tanya is *Red Alert*'s best representation of that unpredictable madness, a wildly silly idea that is also its most entertaining.

BIO

Command & Conquer: Red Alert explores an alternate history where Hitler never existed and the Soviet Union attempted to conquer Europe. In gameplay terms, that's represented by two warring sides, the Allies and the Soviets, both of which have their own colourful types of units that increase in power and novelty as you run through the necessary tech trees, straight into the territory of ludicrous sci-fi – helped along by daft live-action cut-scenes between missions. *Red Alert* combines spectacle with brilliantly accessible RTS mechanics – it should be both everyone's entry point into that genre and eventually, a lifelong obsession.

MORE CLASSIC RED ALERT MOMENTS

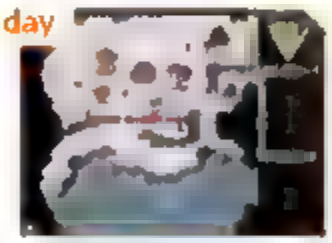
Monster Tank Madness

Red Alert's two expansion packs – or *Retaliation* as they're collectively known on PSone – by far contain the most interesting, high-concept missions of the game. In this case a scrap against robotic tanks that have gone rogue. Monster Tank Madness is epic: players have to capture a Soviet base with engineers, take a ship of units across the sea to reclaim an abandoned base before amassing all the tanks in the universe to take on the two iron curtain-protected monster tanks. A thrilling three-way battle ensues between the Allies, Soviets and AI-governed machines.

We've got an ant problem

Red Alert's only and best Easter Egg: a series of missions hidden away where players have to contend with giant ants, some of which attack with elemental powers. This is probably the hardest part of the game, with missions escalating in the number of insects swarming around your bases and making short work of your men – fire ants, in particular, can quite easily total 20 units in one hit, and with resources lower than ever in the ant missions, it stings to see entire armies reduced to nothing by this mysterious foe. The screeching sound effect the ants make is rather horrible and a little bit creepy, adding an air of the bizarre to the *Red Alert* experience.

Allied cruisers save the day



This is from the game's opening Allies mission, where players first get a taste of the units they can unlock later in the game when they're flush with cash and tech. To wipe out the Soviet base at the end of the level, a squad of slow-moving, deadly cannon-touting Allied cruisers arrive and destroy every structure in a mere matter of hits. *Red Alert* is always at its best when you overload enemies with your most exotic weaponry – the Allied cruiser is probably the coolest vehicle in *Command & Conquer*'s roster. The simple and brilliant sound effect of explosives being brutally lobbed at your enemies is largely responsible for that appeal.

Nuclear civilians

The final mission of *Aftermath* and therefore *Red Alert* overall, Grumyev Revolution, turns one of the game's fundamentals on its head: that civilians are cannon fodder. Instead, they're turned into walking nuclear bombs and, after suffering a battering from a nearby village, you're implored to find reinforcements and regroup before these everyday folk embarrass you. An Allied base packed with the strongest tech available awaits you on the other side of the map as you fight against outrageous odds. It can be done – provided you're able to fend off these bystanders who now come armed to the teeth with weaponry.

BIO

Prior lightgun games had simply required the player to be quicker and more accurate than the enemy, but *Time Crisis* included a foot pedal which allowed the player to dive in and out of cover to reload – an incredibly simple idea which added a new layer of depth to the genre. However, the entire game took place against the clock, adding pressure and ensuring that players couldn't be too methodical in their approach to blasting the bad guys. *Time Crisis* became a massive hit in 1995, ensuring the release of a PlayStation conversion as well as a series of sequels.

CLASSIC GAMES

Time Crisis

» PLATFORM: ARCADE » DEVELOPER: NAMCO » RELEASED: 1995

The arrival of powerful 3D boards in the Nineties allowed arcade game designers to exercise their cinematic skills, thanks to the range of camera angles that were now easily available. However, many games only employed these techniques sparingly in attract modes – after all, directing cinematic action means taking control from the player. *Time Crisis* was already on rails due to being a lightgun game, so there was no such restriction – and Namco made the most of it.

One of the best examples is a particularly exciting scene late in Stage Two. The player's character Richard Miller is running through a corridor. He catches sight of himself reflected in a mirror at the end of the corridor, but that's not all he sees – an enemy guard rounds the corner shortly after him and lets off a shot, narrowly missing Miller and shattering the mirror directly in front of him. Miller then swings around, allowing the player to shoot the enemy. The scene lasts only a few seconds, but leaves a permanent impression on players and spectators alike.

MORE CLASSIC TIME CRISIS MOMENTS

Explosive arrival

Continuing the cinematic theme, Richard Miller's arrival in the first stage is full of action. Sliding down a zip line into the enemy base, the carnage escalates quickly – as enemy troops scramble to deal with the intruding secret agent, a submarine in the background explodes and begins to sink as red warning lights illuminate the area. You don't spend long in this first area, but it makes a huge impact.

Secret agent

Finding secrets in arcade games is always satisfying, just for those moments when you get to impress a spectator who hasn't yet seen them. Early in Stage Two of *Time Crisis* you'll come across some girders – if you shoot the wrap that's holding them together a few times, they'll fall and send all the enemies fleeing, saving yourself valuable seconds in the race to rescue the President's daughter.

Backpedal

Time Crisis doesn't just throw gun-toting bad guys at you – the entire environment can be called into action as a hazard. A battle amidst a group of parked cars quickly takes a turn for the worse for our hero as a car comes sliding around the corner and begins to drive straight towards him, requiring quick release of the pedal in order to avoid eating bumper.

Unfriendly dialogue

Part of the charm of *Time Crisis* is that the dialogue is hilariously bad. Lines like "How could you? You killed my boss!" wouldn't make the script of even the cheapest of cheap B-movies. The character who best combines hammy voice acting and risible writing is Sherudo Garo, the second stage boss, who decides that you need to be 'entertained' so he slings throwing knives at you. Obviously.

CLASSIC MOMENTS

Lylat Wars

» **PLATFORM:** N64 » **DEVELOPER:** NINTENDO **RELEASED:** 1997

The most iconic part of *Lylat Wars* outside of its main cast of anthropomorphic sci-fi heroes is surely the bizarre, but brilliant idea that the last boss is a floating gorilla head.

The final scrap with Andross, which is certainly a step up in difficulty from any of the preceding levels, varies depending on which of the game's two branching narrative routes you take – the more difficult one ends with Andross transforming into his true form, a disgusting giant brain, and climaxes with you performing a daring *Return Of The Jedi*-style escape from danger.

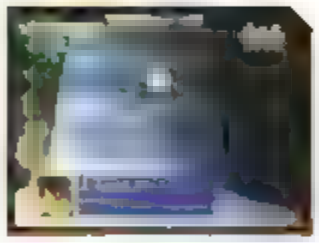
But all routes end with an assault on this giant gorilla head, which is animated so expressively, and the scale of which is so impressive, even relative to the other gigantic boss battles earlier in *Lylat Wars*. It was a brilliantly surprising reward for your efforts that totally matched the climax of *Star Fox* on SNES but made the most of the possibilities granted by the N64's 3D technology.

BIO

Known as *Star Fox 64* everywhere else but Europe – apparently due to a possible copyright dispute over the name 'StarVox' in Germany – according to developer Dylan Cuthbert, this sequel to *Star Fox* on SNES had a weird journey to completion. You probably know the story of *Star Fox 2*, the scrapped SNES sequel, which debuted the multi-route structure that eventually surfaced in *Lylat Wars* – some of the content made it into this N64 title, but the majority of *Star Fox 64* was original. Being skilful allowed the player to unlock new paths through the story, an undoubtedly forward-thinking idea in an energetic arcade shooter.

MORE CLASSIC LYLAT WARS MOMENTS

Another path



Lylat Wars leaves it to you to discover the different routes through levels offered by the story, and the first time that happens to you is pretty damn exciting – circumnavigating a few tight cliffs leads Falco to take you through a waterfall and fight a completely different end boss. This is when *Lylat Wars* starts to branch, letting players gradually peel off each strand of its vast galaxy.

Starwolf showdown

Players face Starwolf no matter which path they take. It's in this encounter, however, on the Death Star-like surface space station environment of Boise, that *Lylat Wars* feels the most like a *Star Wars* movie. With surface cannons sending laser fire everywhere and swarms of enemy fighters, it's essentially structured like the Death Star battle – take out your rivals, blow the core and we'll go home.

Ground assault

A pleasing departure from Arwing-related combat is the opportunity to drive a landmaster during the Macbeth and Titania levels, putting you on ground level for some variety in combat dynamics as this moving armoured train throws boulders at you. Of course, Peppy and company still fly by Arwing, being the cowards they are, and it would be complicated to program ground AI for all four characters.

Solar

Level design is amazing in *Lylat Wars* – it's easily one of the most enjoyable space shooters outside of LucasArts' back-catalogue, with each level using the mechanics in a different way. In Solar, that's taken further by the fact your Arwing is constantly running down in health as you progress through this hot planet, meaning that you have to keep killing enemies or destroying rocks to survive.

ARCADE RULED THE WORLD

Join us as we revisit the arcade industry's origins and chart its evolution from the Seventies to the present day

No matter if you were the first kid on the street with an Atari 2600 or a Spectrum owner marvelling at Bob Pape's conversion of R-Type, it's clear that arcade games were the glue that bound the videogame industry together

As soon as the success of Atari's Pong was established, arcade games became one of the key forces driving innovation in hardware and software within the videogame industry. For decades, the arcade was the only place to find truly cutting-edge gaming. Home computer and console games could only play catch-up with conversions.

But it couldn't last forever. Changing player tastes and rapid advances in technology resulted in the swift decline of the arcade business in the 21st Century, but the market never died. From the early pioneers of the arcade business to those still making a living from coin-op gaming today, we have spoken to key players from the industry to bring you the history of arcade gaming.

THE 70s

THE GENESIS OF AN INDUSTRY

If you grew up in the Seventies you were there to witness the introduction and proliferation of arcade games. We take you on a narrative journey of what it was like back in the day

Seen here is the paper tape for storage of code typically used by video arcade game authors in the mid Seventies such as those at Atari.

The seventies actually represents an interesting period in time for video arcade games. One of growth and pending destruction. A decade that was simultaneously a generator of critical mass for the new medium while also wreaking total havok on the long established coin entertainment industry.

The seed for this world influencing event had begun in 1969 when two office mates and friends at audio giant Ampex decided to pursue the one's vision of marrying computer technology and arcade gaming. Nolan Bushnell and Ted Dabney started to create a video arcade game based on an earlier computer game the two witnessed at Stanford called *Spacewar!*

You have to understand what a novel if not naive concept this was, that two guys could come in and create an entirely new entertainment medium let alone to hope that it would gain any traction in the already established coin industry. First, they were out in California. This was a location about as far away from Chicago, the established mecca of the coin industry, as you could possibly be. Second, they'd have to convince an established coin company to take a chance on it. The industry at that time was dominated by companies that had already been around for decades like Williams, Gottlieb, Bally and Chicago Coin.

The games they were pumping out had been mainly pinball and gun based, though over the Sixties more specialised electro-mechanical (EM) games had gained popularity. Games based on simulations whose subjects would become popular as videogames almost a decade later. Ed Logg, creator of such videogame classics as *Asteroids*, *Centipede* and *Gauntlet* remembers his first exposure to these games. "The first time I played a coin-operated game was at the Berkeley Student Union. It was a game where you tried to shoot down bombers which appeared over the horizon. It wasn't a videogame because the planes appeared to be on a rotating piece of screen. There was a pattern so I could play the game for as long as I wanted."

There was also the uphill battle of the stigma arcades had in a lot of communities as a hotbed for raucous teenagers or in some cases organised crime and gambling. As *Pong* creator Al Alcorn relates, "My earliest memories

▲ [Arcade] Al Alcorn's classic *Pong* – still iconic after all these years and an impressive starting point for the industry.

KEY EVENTS

1971

1972

1975

1975

1976

"My earliest memories of arcades were of shadowy places where naughty things might happen"

Al Acorn

of arcades were of shadowy places where naughty things might happen. Besides the usual pinball machines and 'love' testers there were movie machines that showed graphic movies. At Playland at the beach there was the Fascination arcade, which was grey area gambling. These places were not for family entertainment."

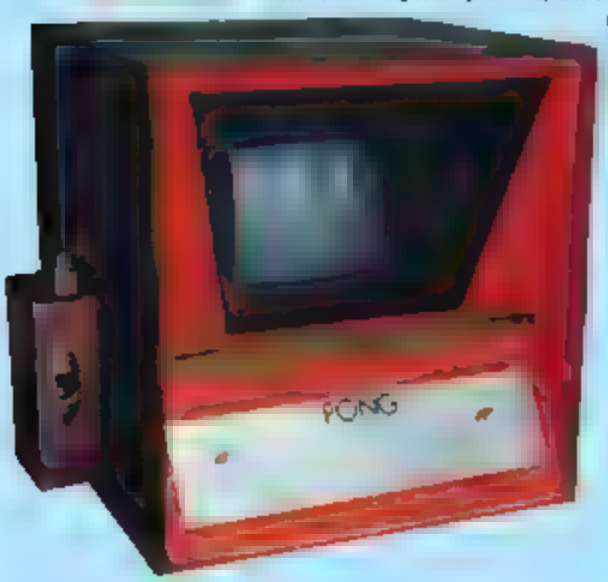
Bushnell and Dabney's initial goal was to start a videogame engineering firm, researching and creating games to license to the big coin companies to produce. If you're asking why they were 'engineering firms' it's because the early arcade videogames were not coded – they didn't have a microprocessor. Rather they were what's called 'state machines' – a grouping of electronic circuits that carried out various functions based on the input – in this case the game's controls. You'd have one circuit to put an object on the screen, another to move them, another to detect a hit, and so on.

They lucked out however and found the one coin-op company based in California, Nutting Associates. Something of an upstart itself, Nutting had been formed by Bill Nutting after creating an EM-based quiz game called *Computer Quiz* with his brother Dave Nutting. Their initial partnership had quickly fizzled and Bill started Nutting Associates in California to sell the game while Dave started Nutting Industries in Milwaukee, Wisconsin to sell his version. Releasing a string of similar games and recently firing most of his engineering staff, Bill was looking for a new game to keep the momentum going. He got the new game in Bushnell and Dabney's proposal plus a new engineer out of the deal as well – as Bushnell left Ampex to join Nutting (followed by Ted close to a year later). Bushnell and Ted's deal was for Nutting to license the game for manufacturing, but they'd do all development on their own time (working after hours at Nutting and at Ted's house).

By August of 1971 they were testing their prototype at a local college bar called the Dutch Goose to great results. The following month, as Bill Pitts was installing his *Galaxy Game* (which uses an actual full DEC minicomputer running *Spacewar!* code) at the Stanford Student Union they found the results at their subsequent test locations far less promising. It turned out the students at Dutch Goose were mainly students pursuing degrees in engineering, physics, and computers. Stepping out of that comfort zone of technical professionalism meant that the patrons at other locations were entirely confused by the gameplay controls and overall presentation. ▶

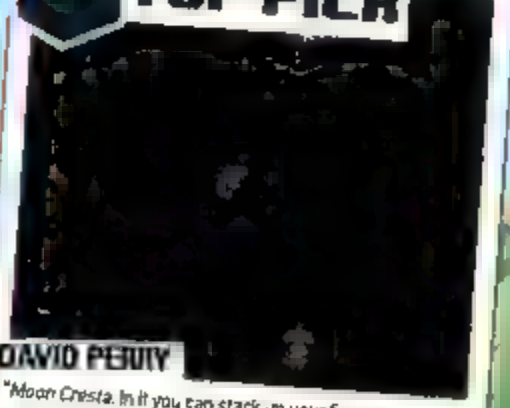
▲ Early arcade games did not use microprocessors or software. Rather they used logic chips, such as this one below.

▲ The exterior of a prototype *Pong* cabinet from the Seventies. This angular design was fairly common.



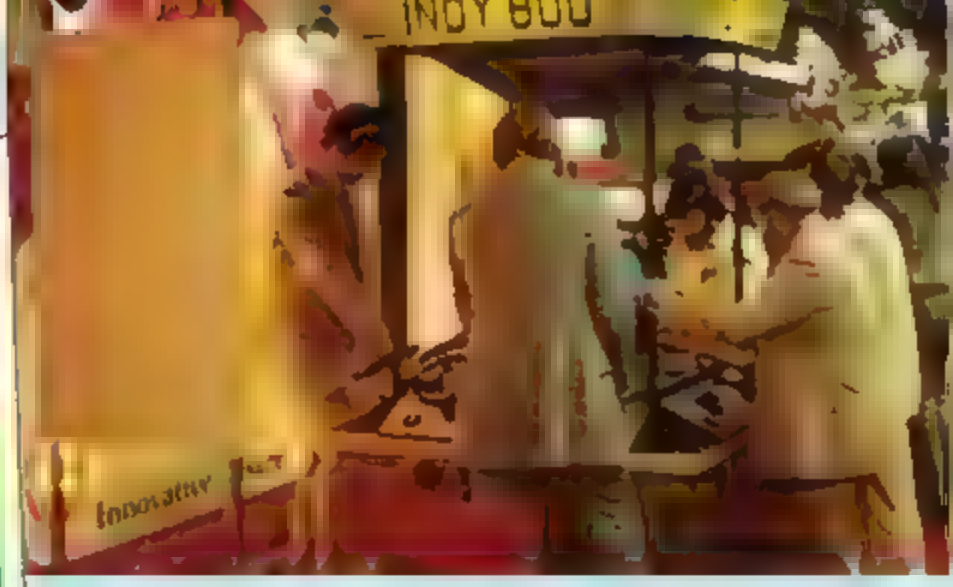
▲ Usually a stripped down television, single game board, and a power supply were all that resided inside machines.

DEVELOPER TOP PICK



DAVID PERRY

"Moon Cresta. In it you can stack up your firepower, so you go from weak to strong to weak. I used this idea in games for many years. You'll see it in games like Earthworm Jim (weak worm in a strong suit), Messiah (weak baby possessing a giant's body) etc. I personally like that gameplay style where you're kicking butt one minute, then very defensive the next."



DEVELOPER TOP PICK

JIM BAGLEY

"Scramble is my favourite arcade game of all time. A local Spar shop got a sit-down cocktail cabinet of it and ran a competition of who could be the first to complete all the levels. I have many great memories playing *Scramble*, even to this day, and now my girls enjoy playing it too!"

▶ In fact this was when the duo learned that presentation across the board was just as important to its success, something the big boys of the coin industry already knew. Bushnell countered with a slick new futuristic design and a somewhat clearer control scheme. A package that actually caught the attention of everyone when they showed it off in Nutting's booth at the main trade show of the era, the Music Operators of America in Chicago. The automated music industry – jukeboxes – was actually the dominant force in coin-operated entertainment at the time, with arcade games being a subset. By the mid Seventies the show would change it's name to the Amusement and Music Operators of America thanks in no small part to the rising dominance of the coin amusement industry thanks to arcade videogames.

Don't expect the type of astonished hoopla that the Apple II generated during its debut at the West Coast Computer Faire six years later though. The common questions Bushnell and Dabney got were "Isn't this just a novelty?" or "Isn't it expensive to broadcast?" (yes, some thought that because there was a television inside that the picture of the game was being broadcast). Regardless, contrary to some modern retellings of the story, their game named *Computer Space* by Bill Nutting went on to sell what is considered a decent average run for an arcade game at the time – enough that the medium was considered viable.

Bushnell and Dabney famously left Nutting the following year to formally start their engineering firm Syzygy Company, only to have it grow into the future industry juggernaut Atari Inc thanks to a game developed by their first engineer, Al Alcorn. *Pong* started off as a starter exercise for Alcorn only to turn into a lesson for the entire coin amusement industry. With simple gameplay and controls, the cabinet developed by Dabney also featured a philosophy he and Nolan had learned during their *Computer Space* days. "Nolan was careful to have *Pong* look very understated so as not to offend women or families. We wanted to stay away from the girly (side art) that were on many pinball machines," states Alcorn. *Pong* is what drove the industry to take notice of the new medium, and a quick expansion as new companies sprung up everywhere with their own versions of the game. Once the big boys jumped on board as well and demand at established coin distributors grew across the globe, arcade space gradually became a fight of old technology and new as owners stocked both and the major companies continued to produce both. In fact for much of the Seventies pinball machines and video arcade machines were neck and neck in popularity and earnings.

> **"It wasn't a videogame because the planes appeared to be on a rotating piece of screen"**
> Ed Logg

A race that was understandable, as video arcade games were still in such a primordial state. Every new game was some new feat, especially since they were still being created purely through engineering. Colour came early on, thanks to Atari's Cyan research lab in Grass Valley that developed an alternate full color version of *Gotcha* that Atari released in October 1973. Animated characters were introduced by Ramtek's *Baseball* in 1974 as the industry moved to make more detailed and interesting games beyond simple ball and paddle driven games. 1976 saw the intro of giant multiplayer games like *Indy 800* and the continuation of the expansion of

ARCADE INITIATION

Though largely unknown to many, Jeff Bell is uniquely experienced to comment on the video arcade game industry. Starting in February 1973 at Atari Inc, he remained in the industry until 2003 when Midway Games shut down what was left of Atari's coin operations after exiting the coin industry in 2001

When did you first experience videogames and how did you get involved with Atari and video arcade games so early on?

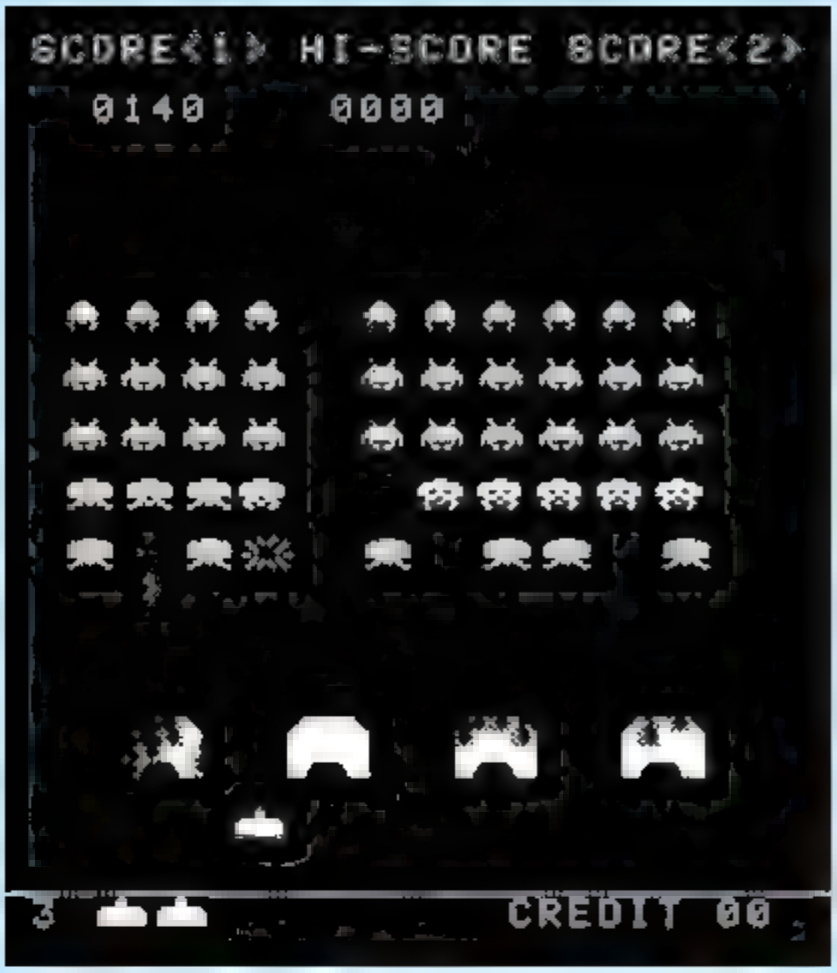
In late 1972 I had just applied for a job at Toys 'R' Us and was just about to go into the hospital for health issues when my friend Keith Lafever came over to my house and excitedly said 'You've gotta see this! You've gotta come!'. So I jumped on the back of his motorcycle and ran up to Sunnyvale Bowl where there was a *Computer Space* and put the only five dollars I had to my name in that machine. It was my first coin-op videogame, and I said 'I want to do this (create games)." It was the coolest thing I had ever seen. When I got out of the hospital in November one of my friends, Derek Becker, was working at this place called Syzygy collecting coins out of pinball and videogame machines for them. He told me all about Syzygy and their game *Pong* that was coming up. When I got out of the hospital it turned out all my friends were working there at Syzygy. I went in and met Nolan Bushnell who gave me a job, but couldn't start until February when my doctor cleared me. Because I couldn't lift anything I became the third *Pong* inspector.

What jumps out about video arcade games in the Seventies era for you compared to the later decades?

In 1972-74, we had to explain to people what a videogame was. By 1976 that had changed to explaining what a 'coin-op' video game was. By the Eighties we needed to explain what the 'Real Atari' was.

Can you elaborate on the last two statements?

Sure. By the mid Seventies the first impression many people had of videogames came from home game consoles. Whenever somebody discovered that I worked at Atari, they would say something like 'Oh yes! I have one...', and I would feel the need to explain that I worked in 'Coin-Op', that a quarter was required to play. By the Eighties, perhaps as an outgrowth of the Consumer Division's success, we began to refer to ourselves in conversation and on T-shirts as 'Coin-Op – The REAL Atari'. This wasn't well received by the other divisions. I heard that we had been asked to not use the phrase. Today I still respond as I did in the Eighties, 'I worked at Coin-Op, the REAL Atari!'



gaming ideas, including a variety of driving and war games. However, it was one technological advancement in video arcade games that made the biggest splash that year: the addition of microprocessors.

All the major arcade companies had already begun exploring adding microprocessors to pinball machines during 1974, and by early 1976 that had extended into video arcade games. Lead by Cyan at Atari and Dave Nutting Associates (yes, that Dave Nutting) that was now affiliated with Bally/Midway. Dave Nutting's project – transferring the Taito-licensed *Western Gun* into a microprocessor driven game – was first in November 1975. That was (almost ironically) followed by Atari/Kee's *Quiz Show* quiz game in April 1976 at the same time they were debuting one of the last of their big non-microprocessor games, *Breakout*.

Even with all this advancement of videogames in the coin industry, video arcade games were still just more of a curiosity in the public consciousness. It really wasn't until this mid-Seventies period and the arrival of the inexpensive TV-tennis home game systems like Atari's Home Pong and Magnavox's Odyssey 100 and 200 that public awareness really began to take off. Certainly video arcade games had been making appearances in film and television since the early Seventies (the first well-known one being *Computer Space*'s appearance in 1973's *Soylent Green*). But now with the buzz generated by home games, the appearances in those entertainment mediums became more frequent.

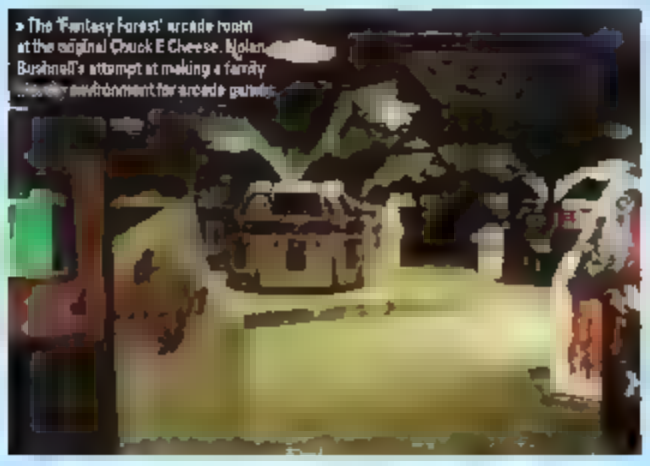
The real growth of video arcade games though, both as the dominant force in the coin industry and as a popular form of entertainment in general, started in the latter part of the Seventies. A result of what was really a perfect storm of reasons, driven by the uniquely timed appearance of a very popular movie combined with a cornucopia of microprocessor driven devices along with some very popular video arcade games being released. From a pop culture perspective, the late Seventies was an explosion of high-tech interest by the public, arguably fuelled by the 1977 release of the film *Star Wars*. Demand for electronic driven consumer devices, gadgets and entertainment seemed to skyrocket and in the arcades videogames were poised to fulfill a kid's demand to live their own space battle-driven fantasy.

The game which led the charge to feed that hunger, and became a phenomenon of its own during the process, was *Space Invaders*. Created by the same person behind Taito's *Western Gun*, Tomohiro Nishikado, in 1978 it took Japan by storm and soon after the rest of the world. Games like Exidy's *Star Fire* brought the literal *Star Wars* experience to the arcade, but it was the further extreme popularity of 1979 space shooter games like Namco/Midway's *Galaxian* and Atari's *Asteroids* and their ever increasing game technology that gave a taste of what was in store for the Eighties, while providing a thirst for more.

It took eight years for the beginning of the dominance of videogames in the coin industry to come about, however 1979 was really when the demand for the engaging medium skyrocketed. Many non-traditional locations (family restaurants, doctors offices, gas stations, etc) suddenly started operating the computer-driven machines there, and for a kid it seemed everywhere you'd go there was an opportunity for you to ask your parents for a quarter (or a ten pence piece in the UK) to play a game. It would also set up a time when dominant hits were first released as coin-op machines and later ported to home versions, something that would last until the mid Eighties.

▲ (Arcade) Electromechanical games predated video games in the arcade, informing the cabinet design of the latter.

▲ (Arcade) Tank's military combat theme would be replicated often in years to come.



▲ The 'Fantasy Forest' arcade room at the original Chuck E Cheese. Nolan Bushnell's attempt at making a family [illegible] environment for arcade gaming.

THE 80S

THE GOLDEN AGE OF THE ARCADE

The Eighties produced a multitude of iconic coin-ops. We gain insights from classic developers into the most thrilling of decades to be an arcade gamer

If the Seventies had been a time of experimental invention for the electronic amusement industry, the Eighties was the decade in which it blossomed with innovation, ushering in the so-called Golden Age of arcade games.

It was the time when fully formed videogames first appeared," says celebrated arcade designer Eugene Jarvis. "Going from almost a blank screen to incredibly crafted games unleashed a mania of hundreds of millions of crazed players worldwide that couldn't get enough of these new fangled videos. Since so few videogames had come before, entire new genres were created: sports, character, maze, shooters, fighting, driving games... The excitement of seeing the birth of such a cornucopia of original titles was thrilling to players.

New games were appearing so fast in amusement parlours in the period from 1980 to 1983 that it was hard to keep track of all the goodies: *Battlezone*, *Missile Command*, *Pac-Man*, *Defender*, *Frogger*, *Tempest* and *Donkey Kong* to name just a handful. It was the decade that saw the appearance of the first LaserDisc game, *Dragon's Lair*, spectacular coin-op cabinets like *Spy Hunter*, *Star Wars*, *OutRun* and *Space Harrier*, the first arcade game with 3D polygon graphics, *Robotron*, and the rise of companies like Capcom and SNK. Behind the burgeoning cabinet rosters of the arcade operators lay an East versus West power struggle between North American and Japanese manufacturers, with the likes of *Space Invaders* publisher Taito, Nintendo, Konami, Namco and Sega competing for floor space with Atari, Williams Electronics, Stern, Bally Midway and Exidy.

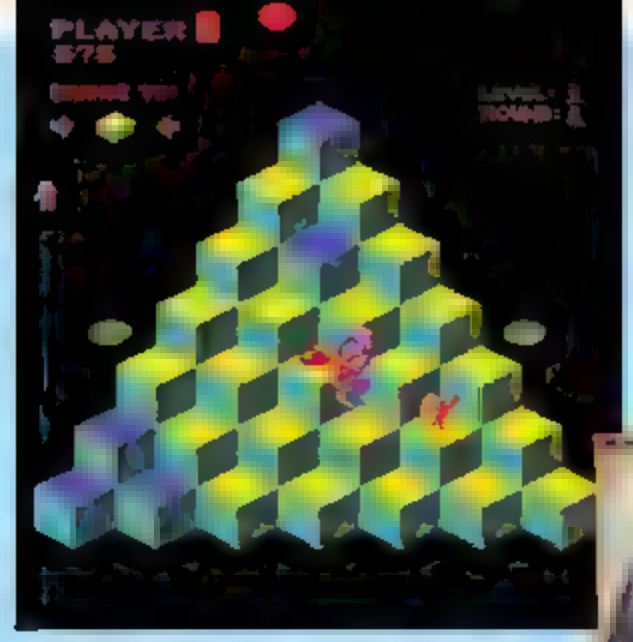
"It was a gold rush," says Exidy programmer Ken Nicholson. "Anything with a screen at a pizza parlour would gobble up quarters. Another factor was the availability and growth of microprocessors. Before the 8080 and 6502, game development was based on much simpler logic. In the early Eighties coin-op games from Japan started to grab the market. At first they were unappealing to US game players for aesthetic reasons but then games from Japan began to dominate the arcade and they had a price advantage."

"The Japanese developers played a huge role in creating many mega-titles of the era," admits Eugene. "Although videogames originated in the US, as soon as they were popularised, many of the big innovations came from Japan. Different styles of play evolved in the East and West. They were very dominant in character, maze, shooting and driving genres, and were highly influential in the birth of fighting games. Many Japanese developers, strongly influenced by anime culture, emphasised character development, hand-drawn animation and backgrounds, and a more deterministic, scripted, pattern-type play as in *Space Invaders*, *Galaxian* and *Pac-Man*."

"American designs reflected a programmer-centric design culture, emphasising algorithmic generation of backgrounds and enemy dispatch. There was an emphasis on random-event generation, particle-effect explosions and

▪ [Arcade] *Galaga* (1981), the sequel to Namco's *Galaxian*, gave players the chance to double their firepower with the help of the alien mothership.

▪ [Arcade] The spinning *Tempest* (1981) was Atari's first full-colour vector arcade game.



CLONE WARS

Jeff Minter discusses Eighties arcade tributes

physics in titles such as *Asteroids*, *Space Wars* and *Defender*. The increased emphasis on algorithmic AI, physics and randomness favoured a more improvisational and tactical playing style due to the lack of scripted events. It was a big challenge to be innovative in the face of such revolutionary competition. All Western developers were strongly inspired by the master designs coming from Japan. For example, American games such as *Centipede*, *Q*Bert* and *Robotron 2084* were strongly influenced by Japanese character animation styles."

While the Japanese had the edge with character-based titles like *Pac-Man*, *Dig Dug* and *Mr Do!*, American designers led the way with engaging and novel action games and shoot 'em-ups such as *Joust*, *Tempest* and *Defender*. "Character and shooter games were the two genres that defined the era," states Eugene. On the character side, *Pac-Man*, *Donkey Kong*, *Q*bert*, *Frogger* and *Mario Bros* set the pace, and in the shooters the defining titles were *Missile Command*, *Defender*, *Berzerk*, *Robotron*, *Galaga*, *Centipede*, *Tempest* and *Zaxxon*, among others."

Williams Electronics was, alongside Atari, arguably the most pioneering of the early Eighties US coin-op publishers. It was one of a number of American companies, including Bally, Stern and Gottlieb, which made the transition from producing mechanical amusements and pinball games to video arcade games. Eugene had started ▶

▶ (Arcade) Gottlieb's *Q*bert* (1982) was one of the most successful US developed character-based arcade games

TRIP HAWKINS

"*Gauntlet* is my favorite arcade game: in fact I bought my parents an upright *Gauntlet* that they had in their basement for many years. I can still hear the game saying "Welcome, Elf!"

What's your earliest memory of an arcade?

I'm so ancient, my memories of arcades actually go back to before the dawn of time when there were no videogames. When I was five years old our family started what was to be a succession of annual Welsh holidays near Snowdonia. Central to these outings were frequent visits to The Golden Sands on the seafront at Tywyn, a combined chip shop and arcade. No videogames, but I remember playing on the grabber machines, penny slot machines, pushers, mechanical horse racing thingies and those driving games that had a rolling film with the track on it and your car was on a stick. The first arcades I used to hang out in with any kind of regularity were the old Piccadilly Arcade up in London, and the Crystal Rooms off Leicester Square. The old Piccadilly Arcade no longer exists as it was underneath where the Trocadero is these days. I can still remember exactly where the *Star Fire* machine was that I put some tasty high scores on.

Why do you think so many developers started off making clones?

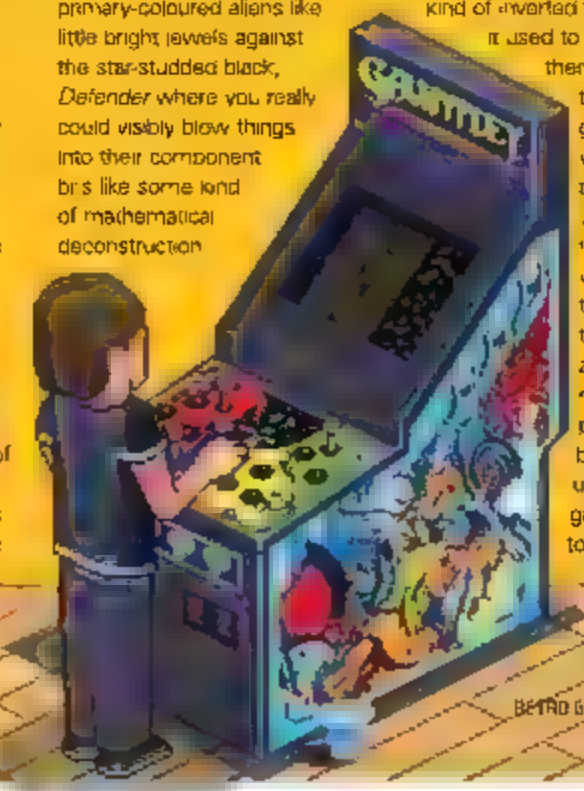
Cloning an arcade game was a good way to learn the basic necessary skills of game design and programming. Arcade games are existing designs that you know work, so programming them when you're learning teaches you a lot. You learn the basic skills of moving stuff around, reading joystick inputs, making noises and implementing game logic using an established template and you know when it's working right. When it's working but doesn't feel like it should then you learn about tuning stuff as you adjust things to make it correct. You learn about hardware limitations and you start maybe learning ways to program around them if you're trying to clone an arcade game that came from hardware more powerful than you are using. And at the end of the day if you weren't too cheeky about it after all that good learning you ended up with a product you could sell.

You've cloned many popular shoot-em-ups. What do you love about the genre?

I've just always loved shooters, I enjoy the headspace they put you into, the so-called 'zone' state that is always the place I aim to take you to in my games. I particularly enjoyed the look of some of the earlier shooters, again the phrase 'abstract beauty' springs to mind. In most games the graphical limitations of old systems just make the games look like shit when viewed through modern eyes, but when you look at stuff like the pure glowing vectors of *Asteroids* and *Tempest*, *Galaxian* with its insectoid primary-coloured aliens like little bright jewels against the star-studded black, *Defender* where you really could visibly blow things into their component bits like some kind of mathematical deconstruction firework display, the absolutely perfect balance of beauty and brutality that is *Robotron*. Those things are still beautiful now, but back then, when only a few years previously the whole idea of game involved cards or boards or sports you were rubbish at because you didn't have 3D vision, the opportunity to step into and dance within these exquisite glowing other-dimensional worlds was something extraordinary and wonderful. It's that feeling that I want to try to convey to people today with the kind of stuff I make.

Your own games improve on the arcade originals, why do you do this?

I think it's just a natural progression when I started, the first things I did were stuff like *Centipede* and *Space Invaders* on the ZX81 and *Defenda* on the VIC-20, and then Atari started getting less tolerant of people doing clones and I wanted to do a *Centipede*-style game on the VIC anyway, so perforce had to make it not so obviously *Centipede*-ish, and ended up making something that I actually liked more than vanilla *Centipede*. Learning that it's okay to colour outside the lines is an important part of anything really. Scrolling shooter suddenly didn't have to mean *Defender* or *Scramble*, why not camels or sheep? These days of course it's kind of inverted from what it used to be back then, where the arcade games were way more powerful than the hardware you were trying to port them to. Doing a simple remake is pretty easy, but a modern update of a game is tricky to do well.

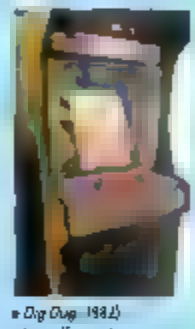


80s

• [Arcade] Bally/Midway gave players the chance to live out their 007 fantasies in *Spy Hunter* (1983)

▶ out programming sound and gameplay features in pinball games for Atari and Williams, and this early industry experience was to become a huge influence in the creation of his arcade titles, *Defender* and *Robotron 2084*.

"Pinball was a great training ground, he tells us. Audio was especially important in pins because there is so much dead time where the ball is rolling around the playfield, not hitting any targets. Background sounds were used to generate increased tension and excitement as a game approached a climactic event. My pinball sound work lead to the creation of many of the amazing synthesised sounds for *Defender*, *Robotron* and other games in the classic era at Williams." The format of the traditional pinball table was also a source of inspiration for other game manufacturers. "Games such as *Breakout* and *Space Invaders* adopted the basic human versus machine pinball game style – three balls (or lives) per game, and the ability to win an extra ball (life) with a high scoring achievement," Eugene explains. "So it was a natural transition to move from pinball to video."



© Olly Cotton

• *Dig Dug* (1982) a tunnelling action game from *Pac-Man* manufacturer Namco.

KEY EVENTS

1980

1981

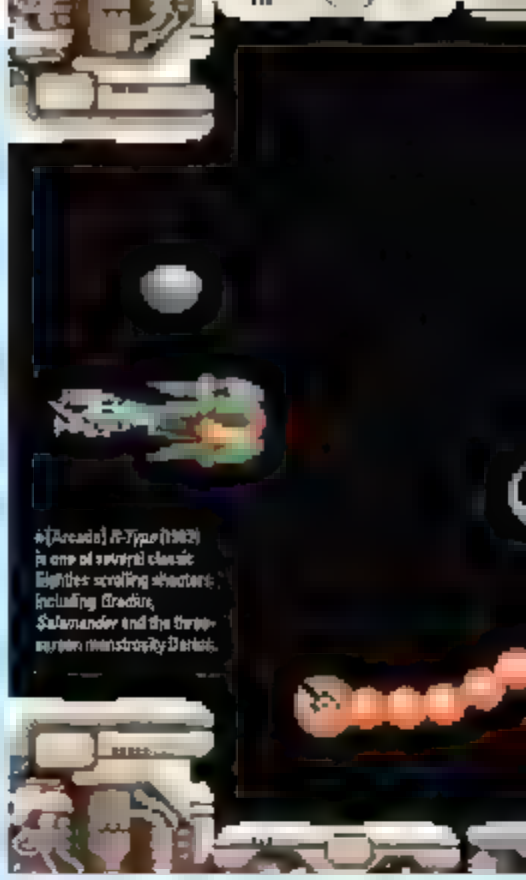
■ Donkey Kong

1983

1989

Defender's dazzling, pyrotechnic visuals and blistering sound effect took arcades by storm, and its free-flowing, multi-directional gameplay represented a huge step up from Konami's *Scramble*, released a year earlier. The aural delights of Williams arcade games became a signature of Eighties arcades, along with *Pac-Man*'s distinctive wakka-wakka, *Berzerk*'s robotic speech and the jingles and digitised movie quotes from Atari's *Star Wars* cabinet. Williams also had one of the first two-player cooperative arcade titles with surreal physics-based flap-'em-up *Joust*. "This was one of the first ideas I had on the game," says designer John Newcomer. "If it could be designed for two players to compete or cooperate simultaneously, it meant two coins would go in the machine at the same time.

"Coin-op games at the time were all single-player, except *Wizard Of Wor* and *Space Wars*, which was a dead game by this point. My hope was that *Joust* would be a step towards making two-player take off in subsequent games. Unfortunately, people did not go for the two-player feature. It helped the cash box a bit, but the vast majority of plays were still single-player." But while *Joust* was the exception to the norm in 1982, it paved the way for later Eighties multiplayer coin-ops like *Gauntlet*, *Bubble Bobble*, *Salamander* and *Double Dragon*.



• [Arcade] *R-Type* (1982) is one of several classic Eighties scrolling shooters, including *Gradius*, *Salamander* and the three-screen monstrosity *Darius*.

Designer of *Q*bert* Warren Davis remembers, "I probably played games in bars more than in arcades, and you would know what games the bar had. So when you went back and they had a new game, it was a big deal. You'd check it out, maybe watch other people play and then decide if you wanted to risk one of your own quarters on it.

"Williams seemed to have the most intense game experiences. I wasn't particularly a fan, but I admired the skill a person had to have to master their games. My favorite Williams game was probably *Joust*. Who knew I would later get to program *Joust 2*? I liked *Dig Dug* and the *Star Wars* vector game from Atari, *Berzerk* from Stern, *Pac-Man* and *Tron* from Bally/Midway. I always thought Williams pushed the envelope

> **"I always thought Williams pushed the envelope in terms of graphics with Joust and Sinistar"**
>
> Warren Davis

DEVELOPER TOP PICK

DAVID BRABEN

"My favourite arcade game was the excellent Williams *Defender*, written by Eugene Jarvis in 6502 machine code. I loved the challenge of the game, and for me was the first game I saw in the arcades that wasn't a *Space Invaders* derivative, and was in colour (ie not stick-on strips on the TV screen like *Space Invaders*)."

• [Arcade] *Robot* (1983), the first polygon arcade title, from *Mikro Command* and *Tempest* designer Dave Theurer.

© Lucas Ray

• Bally/Midway's beautiful cabinet for *Tron* (1982) was a work of art.

• The *Double Dragon* [illegible] with *Final Fight* and *Golden Axe*, were defining scrolling beat-'em-ups.

in terms of graphics with games like *Joust* and *Sinistar*, while Nintendo had the best use of cartoony characters in their games."

"Personally, I enjoyed games from most of our competitors," admits Ed Rotberg, creator of Atari's *Battlezone*, the first coin-op title to allow players full freedom of movement in a 3D landscape. "Certainly Williams was at the top of the list with Eugene's games like *Stargate*, *Defender* and *Robotron*. Tim Skelly, whether at Cinematronics or Gottlieb (*Rip Off*, *Star Castle*, *Reactor*) was constantly earning my respect. Of course, the Japanese manufacturers had some great products as well. *Pac-Man* and *Galaga* took up a lot of my time and money."

Atari continued to break new ground through the Eighties, improving its vector graphic hardware to include colour for titles like *Star Wars*, *Tempest* and *Black Widow*, and becoming one of the first companies to produce true 3D arcade games, starting with 1984's enigmatic *I, Robot*. "Certainly the Vector Generator (followed by the colour VG) allowed for such games as *Asteroids*, *Battlezone* and *Tempest*," says Ed. "There is a case to be made that the Vector Generator hardware allowed for decent 3D for the first time. I also think that, at the other end of the Eighties, the polygon hardware that was first used in *Hard Drivin'* and *STUN Runner* also helped keep Atari as a player in the arcade game business."

"The mix of people was key to the way it all developed," says ex-Atari designer Peter Lipson, producer of the *Indiana Jones And The Temple of Doom* coin-op. "So many people had excellent design skills, and the way we were mixed at work led to a lot of innovation but even more importantly, to a lot of refinement of ideas. Your co-workers had no trouble telling you when something sucked. But when you saw them flocking to your game in the lab during their break times, you knew you had something.

"Another thing people have forgotten is that arcades used to be somewhere you could go with your date just to see what new game might have shown up. I think the era of the fighting games made the arcades far less female-friendly. Not that women haven't always been players, but the casual audience seemed to be put off by the change in aura. After that, it seemed games couldn't succeed just by being quirky and fresh. We were entering the equivalent of Hollywood's blockbuster era."

DEVELOPER TOP PICK

JOHN ROMERO

"Absolutely, for me, *Pac-Man* changed everything. Most arcade games before *Pac-Man* were all black-and-white alien-killing games. *Pac-Man* emerged with a completely unique premise: run away from cute monsters while eating dots. No violence, no guns, and a window into the possibility space of game design."

MARIO MAN

Alex Crowley talks to us about his huge Nintendo collection

What made you consider amassing such a vast collection of Nintendo arcade machines?

Preservation. It is essential to hold on to this social history of arcade machines because it is quickly being forgotten about. Also, because arcade machines are so big, most collectors only choose the best games for their collection. But I took it on my self to concentrate on Nintendo and that meant taking on and restoring some of the less well-known titles, which am really proud of, as it turns out to be quite a unique and rare collection.

How did you go about it initially?

My first arcade machine was *Space Invaders Part II*, and that was bought on eBay. From there joined the arcade forums KVAC & Jamma+. It has opened the doors to a community of fellow collectors where I have imported machines from the US and found rarities amongst UK collectors and made some very good friends.

In your opinion, what are the highlights of your collection?

The highlights in my collection are *Donkey Kong 3* and *Space Launcher*. *Donkey Kong 3* was a kit that I managed to find in its original box complete for just $160. I then converted a versus upright cab which I bought from *Missile Command* champion Tony Temple and turned it into the underrated game I love to play today. It turned out to be my favourite game in my collection. *Space Launcher*, apart from being a great game, is a highlight because it's the only known example to exist in the world amongst the community.

What do you think that the arcade market lost following Nintendo's departure to home consoles?

Well to be honest, until *Donkey Kong* came along they were copying a lot of other more successful arcade developers. But I think once *Donkey Kong* dominated the world it changed Nintendo forever. By 1984 arcades were dying out anyway, so it was natural for Nintendo and other manufacturers to pursue the home market. Arcades were never the same after the Eighties kids grew up, but the arcade games didn't.

***Mario Kart Arcade GP DX* was released recently in arcades. What are your thoughts on other companies taking Nintendo's property to market?**

I think it's a great idea, and anyway, Sega made games and distributed them for Nintendo back in the late Seventies. I think Nintendo has to let go of some of its top titles to third parties to help out with their huge and fantastic back catalogue of games.

How do you think arcades have changed since the early days?

They have changed in the sense that kids no longer go there to see the latest games and ultimate new graphics. The technology was new and exciting when we were kids, the machines always had new experiences and innovative ways to play a new game. With synthesized speech, trackballs and extra buttons, these were magical light boxes and it was an amazing time to be a kid.

THE 90s

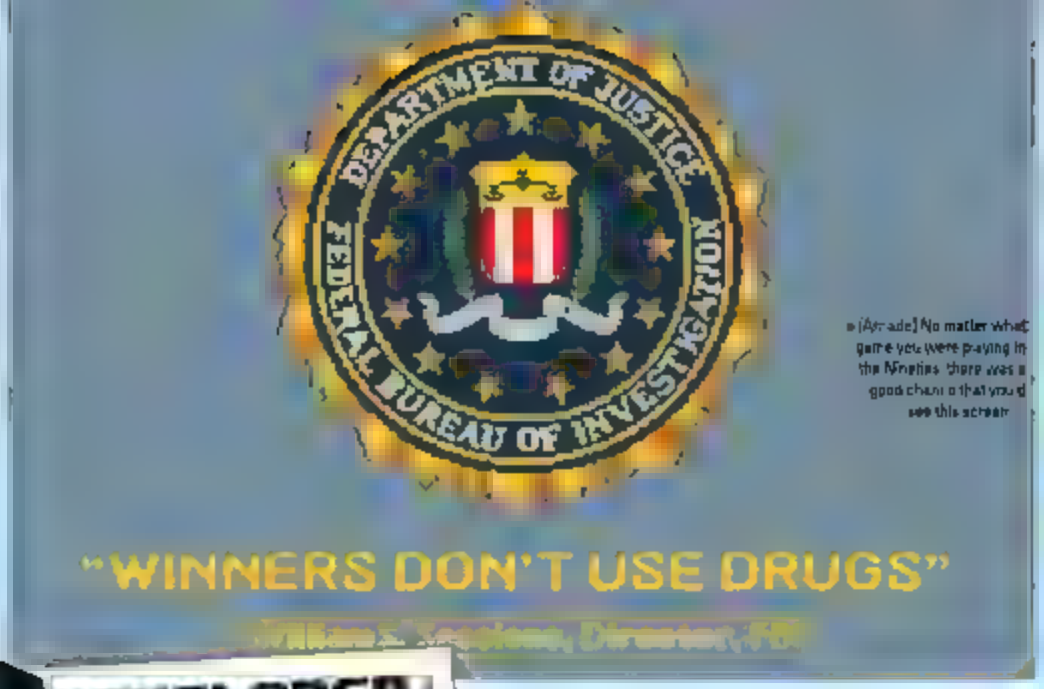
THE DECADE OF RIVALRIES

Join us as we the arcade's final decade of dominance, when players took to fighting and manufacturers battled over technology

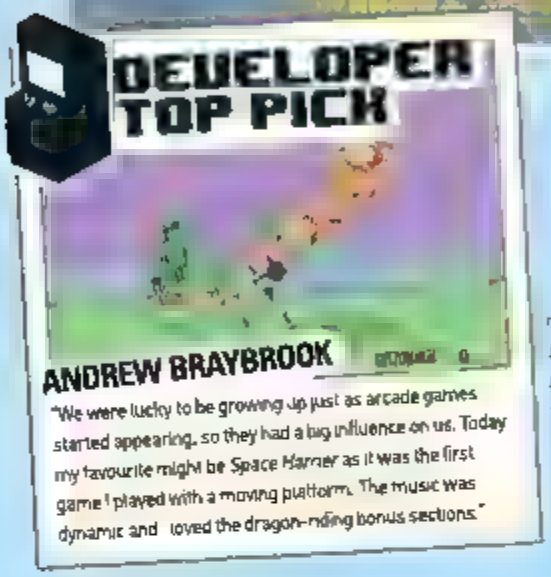
While the Nineties would prove to be a time of great change in the arcade industry, you wouldn't have known it to look at the early years of the decade.

Scrolling beat 'em-ups, popularised in the Eighties, continued to prove popular with audiences. Konami delivered a string of licensed hits, from *The Simpsons* to *X-Men*. Taito was still introducing new *Space Invaders* games to market with *Super Space Invaders '91* making its debut. At Williams Electronics, a young Mark Turmell was working to revive an Eighties hit. "I joined Williams Electronics with the sole purpose of reviving the dual-stick control, and told them so during my interview process," remembers Mark, who was as thrilled by the power of arcade hardware as the players. "I had been doing Atari 7800 cartridge-based games, where you only had a few sprites that could be on the screen, so this was an amazing advance for me. In the first few days I kept turning on more and more objects on the screen drifting toward the player, and was mesmerized by the power." *Smash TV* was a game that typified the arcade experience, with fast action, amazing amounts of carnage and huge bosses. However, it wasn't the success that its developers had hoped for. "*Smash TV* won some arcade awards, and had decent success at that level, but it was still a disappointment to me in terms of sales and cash box collections," confides Mark. While Mark would eventually go on to huge success with *NBA Jam* a few years later, *Smash TV*'s situation was one that was mirrored across the industry – a quick look at the arcade releases of 1990 will show you a lot of good games, but solid releases rather than enormous hits. Even the likes of Sega's *G-Loc*, housed in the awesome fully rotating R360 cabinet, were old experiences dressed up with new hardware.

But the first signs that the winds of change were blowing came with the first enormous hit of the decade. The original *Street Fighter* had done reasonable business for Capcom in the Eighties, but the arrival of its sequel in 1991 quickly relegated it to a mere footnote in the history books. *Street Fighter II*'s colourful cast of international martial artists and sublime gameplay quickly endeared it to millions of gamers worldwide. The game would prove responsible for the rise of the one-on-one fighting genre, and is often credited with renewing interest in arcade games during the early part of the decade. Previous arcade games had often focused on co-operative play or indirect competition for high scores, but *Street*



» [Arcade] No matter what game you were playing in the Nineties, there was a good chance that you'd see this screen

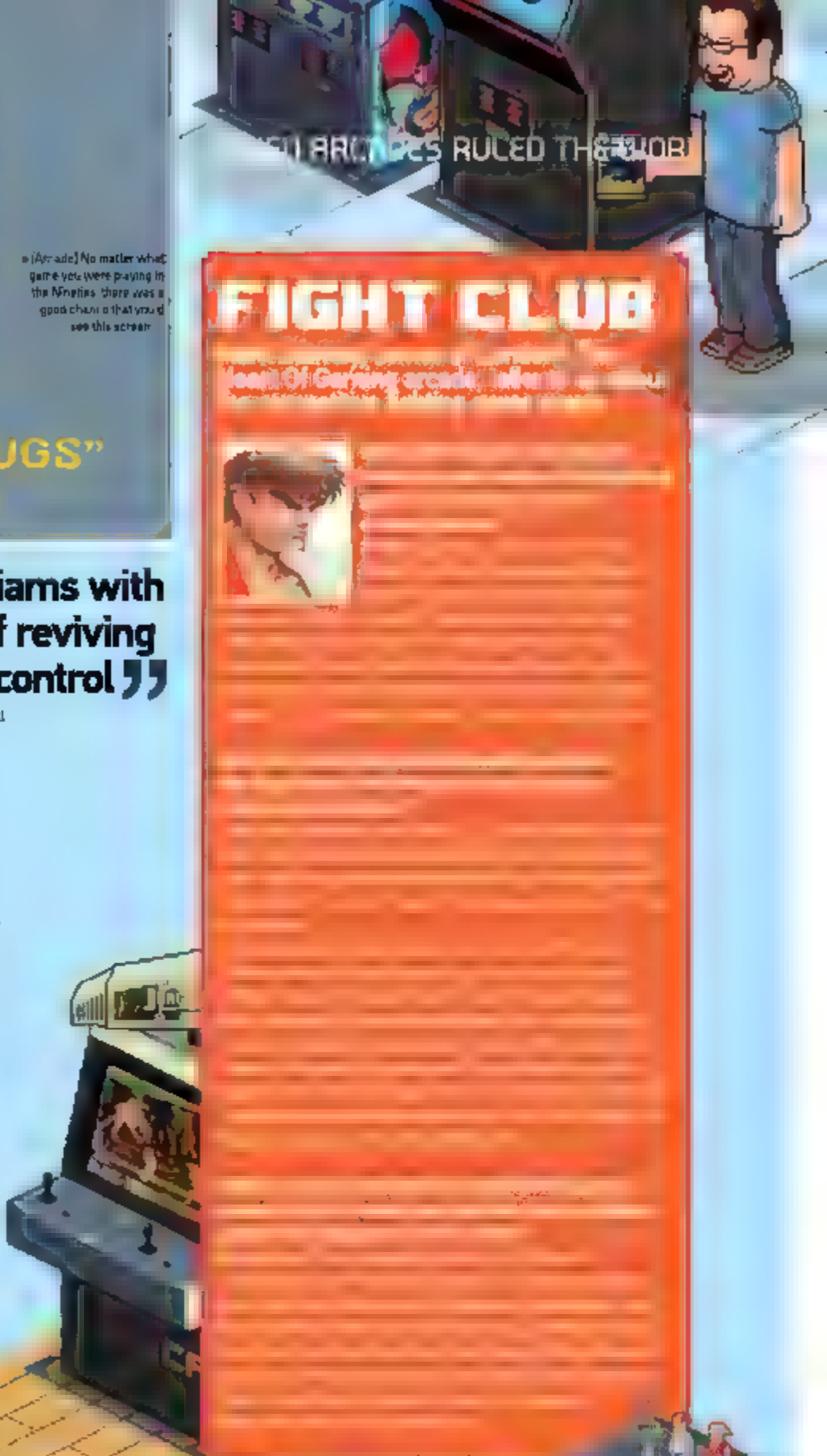

DEVELOPER TOP PICK
ANDREW BRAYBROOK
"We were lucky to be growing up just as arcade games started appearing, so they had a big influence on us. Today my favourite might be *Space Harrier* as it was the first game I played with a moving platform. The music was dynamic and I loved the dragon-riding bonus sections."

> **"I joined Williams with the purpose of reviving the dual-stick control"**
> Mark Turmell

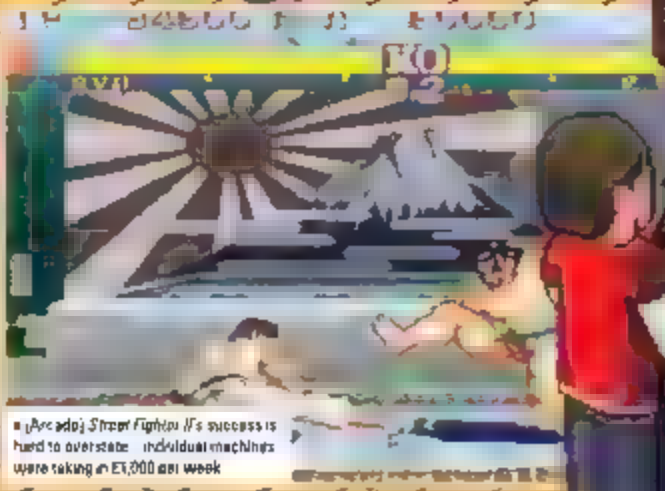
Fighter II's key appeal was in standing next to your opponent as you bested them, a factor which paved the way for both the game and the wider genre to become popular in tournament play. Later in 1991 SNK released *Fatal Fury*, a one-on-one fighting game directed by Takashi Nishiyama, a former Capcom employee who had served as the director of the original *Street Fighter*. As the two companies became increasingly prolific in the genre, a rivalry developed which would last for the remainder of the decade.

As well as providing a business boost, the beat-'em-up sensation produced controversy. While the likes of *Street Fighter II* and *Fatal Fury* had been violent, they were never gory. *Mortal Kombat* quickly changed that. Though it wasn't the first game to feature sprites digitised from human actors – they were introduced in the early Eighties and popularised by *Pit Fighter* in 1990 – the combination of the graphical approach with a high level of violence and gore caused a major moral panic in the way that the cartoonish likes of *Time Killers* never could. *Mortal Kombat* would go on to be one of the key titles in the 1993 US Senate hearings on videogame violence, though largely due to its appearance on home consoles. However, the Amusement and Music Operator's Association was represented at the hearings and, along with the American Amusement Machine Association, created a parental advisory system the following year. This didn't stop the release of *Mortal Kombat II*, nor other gory fighters that appeared in 1994 such as *Bloodstorm* and *Killer Instinct*, but applied a colour-coded rating to the cabinet for all to see.

Around this time, the demise of an old technology became apparent. Laserdisc ▶



» [Arcade] The infamous Fatality moves caused *Mortal Kombat* to rake in both quarters and column inches.



» [Arcade] *Street Fighter II*'s success is hard to overstate – individual machines were taking in £1,000 per week

90s

▲ (Arcade) Namco's *Starblade* provides a key example of how rapidly polygon technology developed. It's only two years older than *Ridge Racer*.

games, which had set new graphical standards when introduced in the Eighties, still seemed to be strong in the early Nineties. American Laser Games released *Mad Dog McCree* in 1990, and in 1991 Sega brought *Time Traveler* to market in an innovative cabinet which used a mirror to create the illusion of holographic projection. But by 1994 the final Laserdisc games had left the production lines, including Atari Games's *Cops* and American Laser Games's *Fast Draw Showdown*.

But while old technologies fell by the wayside, others rose to prominence. Polygonal 3D games began to hit their stride in the early Nineties – while they had existed since the Eighties, the arrival of Sega's *Virtua Racing* in 1992 would kick off a technological arms race. The game's high polygon count was achieved with the Model 1 arcade board, a joint development with General Electric Aerospace. The board would only host another five games, including *Star Wars Arcade* and the original *Virtua Fighter* as Sega had its sights set on the next big advance – but crucially, so did Namco. The company introduced the System 22 board in 1993 with *Ridge Racer*, the first ever 3D racing game to employ texture mapping, which enabled a greatly enhanced sense of realism over the flat coloured polygons that had gone before. Sega shot back with *Daytona USA* on Model 2 just months later. But while 3D games were becoming increasingly popular, they were very expensive for developers as well as operators, ensuring that 3D games didn't become the dominant force in the industry for some time. Indeed, huge film properties like *Jurassic Park* were still being given sprite-based treatments. But by 1996 both Sega and Namco had transitioned to releasing 3D games, having learned to exploit their boards to the fullest. The rivalry between the two companies produced some of the biggest hits of the decade – Namco's System Super 22 was the technology behind *Time Crisis*, *Prop Cycle* and *Alpine Racer*, while Sega's Model 2 series ran *Virtua Cop*, *Sega Rally* and *The House Of The Dead*.

▲ Twin sit-down racing cabinets of the Ninties were often available for increased player numbers.

"I kept turning on more and more objects on the screen, and was mesmerised by the power"

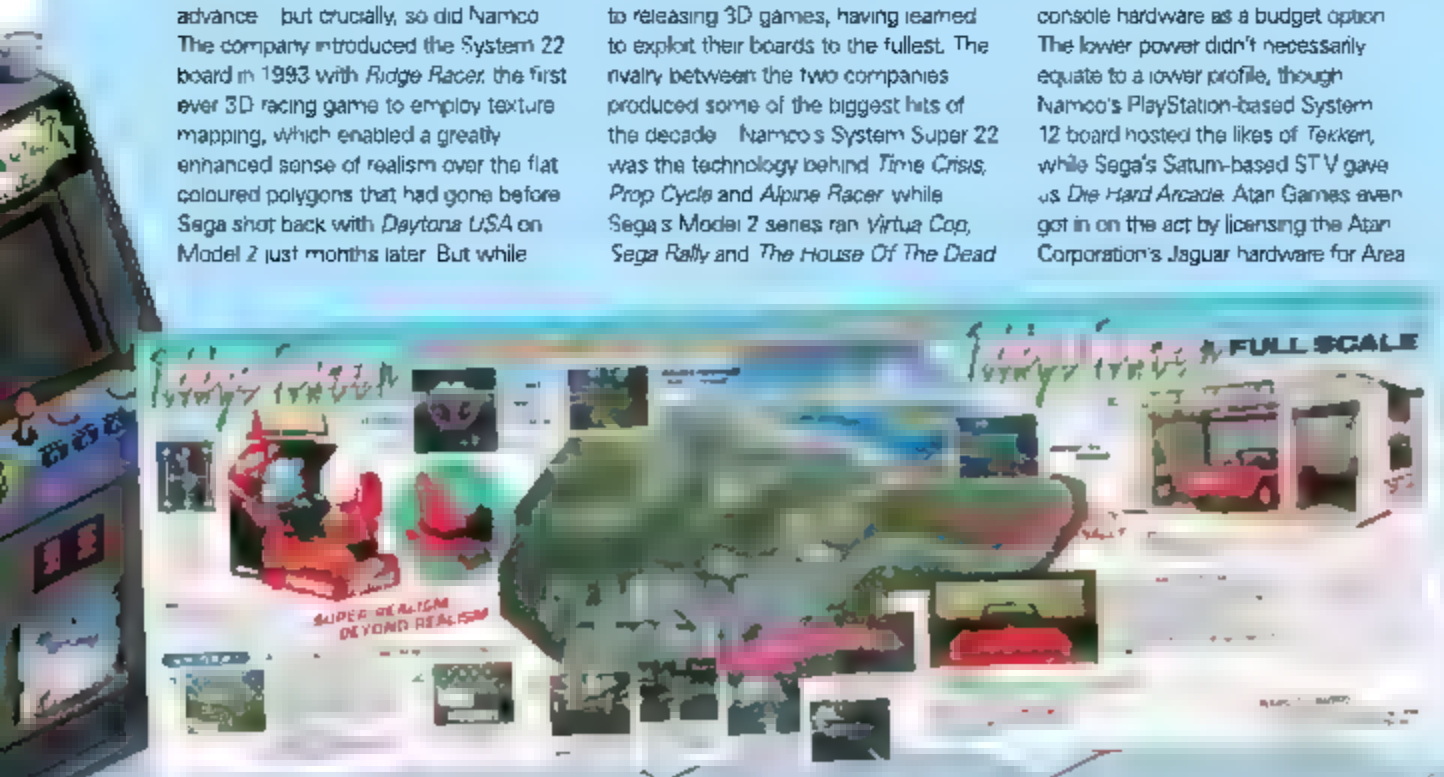
Mark Turmell

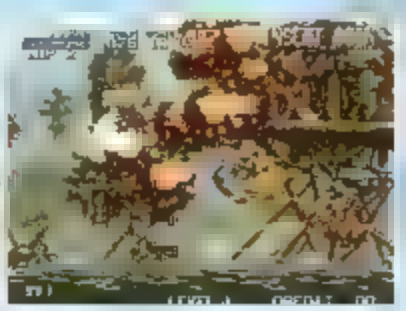
DEVELOPER TOP PICK

JON RITMAN

"That's easy: *Battlezone*, and as soon as I started writing this I played it for 15 minutes. At one time in my life my place was party central and inevitably hunger would set in and someone would be sent to the local burger joint, not such a bad thing as there they had a *Battlezone* machine."

While this was going on, home consoles were rapidly catching up to arcade technology. Namco's PlayStation conversion of *Ridge Racer* wasn't arcade perfect, but it was close enough not to matter greatly – a fact which opened the arcades up to boards based on home console hardware as a budget option. The lower power didn't necessarily equate to a lower profile, though. Namco's PlayStation-based System 12 board hosted the likes of *Tekken*, while Sega's Saturn-based ST-V gave us *Die Hard Arcade*. Atari Games even got in on the act by licensing the Atari Corporation's Jaguar hardware for Area 51 and *Maximum Force*. These cheaper boards were very attractive to developers too – particularly those who weren't able to stump up the research and development budget needed to take on Sega and Namco. Manufacturers like Konami and Atari Games were still producing custom high-end boards to power releases such as *GTI Club* and *San Francisco Rush*, but others such as Capcom and Taito simply relied on their own PlayStation variants for their 3D releases. Other developers didn't make the leap at all. Irem left the arcade market behind in 1994 due to poor sales, followed by Data East in 1996. SNK found the transition to 3D difficult after relying on the 2D power of the Neo Geo for so long – when the Hyper Neo Geo 64 arrived in 1997 it was expensive and behind the curve graphically, causing it to die a premature death.





▲ (Arcade) SNK was one of the last companies on the 3D bandwagon, marketing games like *Metal Slug* instead.

It wasn't just the developers struggling to keep up. The pace at which technology was advancing meant that operators needed to invest heavily in new machines to stay relevant in the Nineties. Additionally, major attractions had become important to operators, but they came with a price. Dedicated cabinets with unique control methods like *Prop Cycle*, *Wave Runners* and *Rapid River* were great for drawing customers, but couldn't be upgraded with new kits like lightgun or racing cabinets could, leading to stagnating line-ups later down the line. Inevitably, these costs were passed on to players – the price of a credit would creep up over the course of the decade before settling around £1 for new releases.

It's ironic then that one of the great trends of late Nineties arcade gaming began with a small cabinet with low graphical power – *Beatmania*. Konami's 1997 release saw players spinning a turntable and hitting buttons on a keypad to match the notes dropping down the screen – a simple concept, but one which hooked thousands of gamers and has seen over 40 arcade releases to date. Konami, realising that it had a hit on its hands, quickly broadened the concept beyond the DJ simulator to other music-based games, introducing the similarly prolific *Dance Dance Revolution* in 1998, then *Guitar Freaks* and *DrumMania* in 1999. Other developers were taking notice, too – by 1999 Sega had given us the maraca-shaking favourite *Samba De Amigo*, Namco had introduced the *Taiko No Tatsujin* drumming series and Andamiro had introduced *Pump It Up*, a dancing series to rival Konami's *Dance Dance Revolution*. These games would initially become popular in Japan, but some canny localisation saw *Dance Dance Revolution* become a worldwide hit (albeit under the name *Dancing Stage*, in Europe).

While music games were ascending, other genres didn't fare so well. Despite the high quality of releases like *Spikeout*, scrolling beat-'em-ups were hard to come by towards the end of the Nineties, in part due to the difficulties faced by developers during the transition to 3D. Traditional shoot-'em-ups had also largely been confined to Japan, whether 2D or 3D. The advances in console technology meant that players were concentrating on the games which they couldn't get at home – and operators responded with their purchases, a fact reflected in the hits of the era. While the likes of *Crazy Taxi* and *Hydro Thunder* might have received excellent home conversions later on, it was hard to beat having a steering wheel and pedals.

By the end of the Nineties, arcades had lost their edge over mass-market home consoles, some major companies had fallen by the wayside and operators were feeling the pinch. But with the music game boom buoying the industry and hits still arriving in other genres, the outlook for the new millennium was good. Of course over a decade on, we know better – which brings us to the concluding part of our arcade history.

KEY EVENTS

▪ (Arcade) *NBA Jam*'s success was anorthous, prompting Midway to expand the formula to other sports with games like *NFL Blitz*.

1991
■ [illegible] popularising one-on-one fighting games and earning Capcom hundreds of millions of dollars in sales.

1993
■ Namco's *Ridge Racer* becomes the first game ever to employ textured mapped polygons [illegible] used today.

1996
■ Sega opens Sega World in the London Trocadero combining theme park-style attractions with six floors of arcade games.

1997
■ *Beatmania* launches in Japan, the first of Konami's many popular music games.

1999
■ *Buriki One* launches in Japan becoming the final release for SNK's short-lived Hyper [illegible]

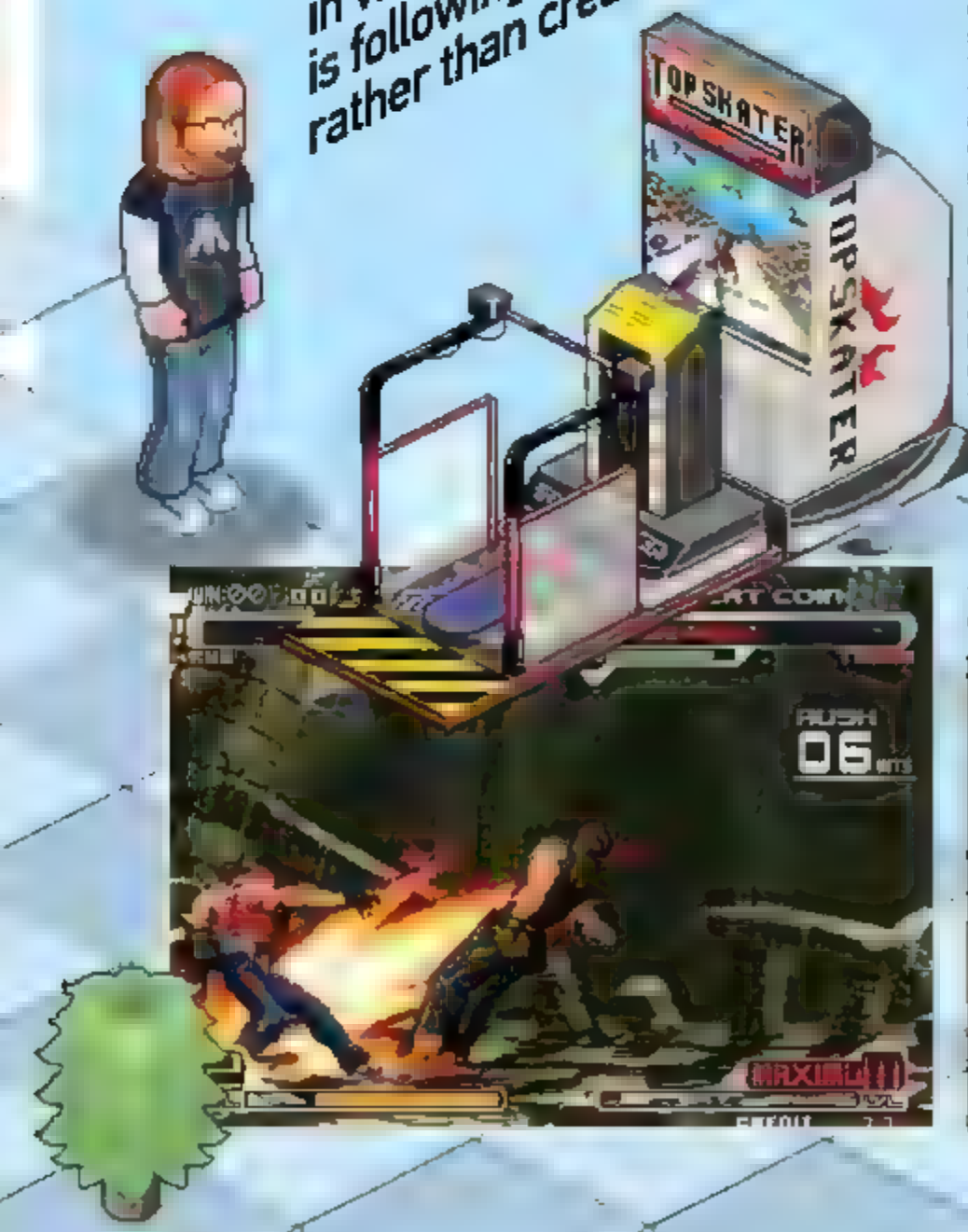
▪ (Arcade) *Time Crisis* ran on Namco's System Super 22.

MELODY MAKERS

END GAME

THE ARCADE AS A SIDESHOW

Let us be your guide in an era in which the arcade industry is following gaming trends, rather than creating new ones



The strength of arcade games has always been their ability to offer entertainment that you can't replicate at home – but around the turn of the millennium, the technological boundaries of games began to change.

Sega's primary arcade board was the NAOM , essentially an arcade version of the Dreamcast, while Namco slowly shifted towards the PlayStation 2-based System 246. For the first time ever the technology at the top of both home and arcade markets was the same and dedicated arcades struggled as hardcore gamers looked elsewhere.

The number of arcades operating in the USA had slumped from 10,000 during the Nineties boom to just 3,000. As business conditions worsened, companies began to exit the market. Midway closed its arcade operations in the early part of the decade in order to concentrate on the home market, taking with it the recently absorbed Atari Games. In Japan, SNK's failing finances allowed it to be bought by Aruze, a pachinko manufacturer that stripped the Neo Geo manufacturer's assets and allowed it to become bankrupt. But while these companies disappeared, it's notable that new ones sprang up to replace them. "Sometimes you feel like a total dinosaur stuck in a time warp," says Eugene Jarvis, who founded Raw Thrills in 2001. "But then you go to an arcade and tap into the enthusiasm of the kids and you get massively jazzed about your next project." Meanwhile, SNK's intellectual property was quickly bought back by Playmore, a new company formed by SNK founder Eikichi Kawasaki that quickly entered the arcade market – though still reliant on the ageing Neo Geo hardware.

In an effort to retain the hardcore players, arcade manufacturers began to implement new hardware features. *Virtua Fighter 4* popularised the use of memory cards, which allowed players to track their wins and losses as well as customising their characters. Memory cards quickly proliferated across genres – from gun games like *Ghost Squad* to music games such as the *Beatmania IIDX* series, and even racing games like *Mario Kart Arcade GP*. However, international arcade operators didn't adopt the cards in huge numbers, meaning that they're still primarily found in the Asian market. Another major development was the addition of online functionality to arcade games. Western releases such as the *Big Buck* series of hunting

A LONG WAY FROM HOME

Where arcade conversions once sold home hardware, in recent years you're far more likely to see arcade games using licensed products to entice players. While film licences like *Terminator Salvation* and *Transformers* continue to do big business, you're now also likely to see familiar names from console and mobile gaming appearing in the arcade. The trend became noticeable around 2005 – while Global VR had been using EA licences such as *Need For Speed* for some time, they were joined by the likes of *F-Zero AX* and *Mario Kart Arcade GP* – takes on popular Nintendo series by Sega and Namco respectively. More recently, popular mobile games such

games often feature national high score tables and tournament features, while online multiplayer is usually reserved for Japanese games. The poster child for this approach is Sega's *Border Break*, a mech combat game that has generated over £60 million in sales since its introduction back in 2009.

But the majority of arcade manufacturers today aren't making games for the long-departed hardcore gamer – they're making them for the people visiting theme parks, seaside resorts and bowling alleys. Though there are still dedicated arcades which are running at a profit, the locations that have best weathered the storm are US chains like Dave & Busters and Chuck E Cheese's, where arcade games serve as a supplementary attraction rather than the main draw – it's a simple change, but one that has required developers to adjust their development practices. "The arcade is a much more casual space," Eugene tells us – so we have to make a game wider as opposed to deeper, and make sure every player has fun and a challenge. We have to go light on the punishment, even though it is always fun to see a player totally destroyed!"

The other major adjustment, at least as far as the Western market is concerned, has been the marginalisation of genres. Music games have suffered heavily, thanks to a combination of recession-fuelled conservatism and the boom – and subsequent decline – of peripheral-based music games on home consoles. Five new music games were introduced to the UK market at 2009's Amusements Trade Exhibition International show, but by 2013's European Amusement and Gaming International show the genre was absent and Konami, the genre's major player, was no longer providing arcade videogames to the UK. Meanwhile, traditional joystick-based games have almost disappeared. While some notable exceptions exist – *Super Street Fighter IV*, *Virtua Tennis 4* and *Pac-Man Battle Royale* have all arrived in the last few years – the market today is primarily composed of driving games and lightgun games. The result is that products are developed with those genres in mind. Where *Batman* was represented with scrolling fighters in the Nineties, in 2013 Raw Thrills adapted the licence with a driving game that harks back to the likes of *Chase HQ*.

But ultimately, that situation makes sense. "The arcade is all about physicality and human interface," Eugene tells us, and when you look at the new products to hit the market, the most successful ones hit a number of his key features. "Huge monitors, immersive racing cockpits and physical I/O like lightguns, motion cabinets, leaning motorcycles." No matter how impressive your home entertainment system, it doesn't offer domed screens, moving seats or air jets – and it probably never will. The likes of *Mach Storm* would lose something in the home, and it's this fact that ensures that arcade games remain in demand.

Despite the diminished status of the arcade in the bigger picture of videogames, Eugene's ambitions remain sky high. "Like bank robbers living for that one last job, arcade developers dream of creating the next humongous hit – the new *Pac-Man*, *Tetris* or *Angry Birds* that will catch the world on fire." Perhaps in the future, we will be telling this story of how Eugene created that new arcade sensation. We can only

▲ Arcade memory cards can become collectibles in their own right, featuring a variety of attractive designs.

▲ Lightgun games with big licenses attached tend to perform well.

▲ [Arcade] Manufacturers now regularly utilise popular home console games to provide new products

WHEN ARCADES RULED THE WORLD

KEY EVENTS

2001

■ *Virtua Fighter 4* is released in August, popularising the use of memory cards in arcades.

2004

■ SNK Playmore releases its final [illegible]

2005

■ Square Enix purchases Taito Corporation in [illegible]

2006

■ Online [illegible] Insight.

2011

■ The London [illegible] payment.

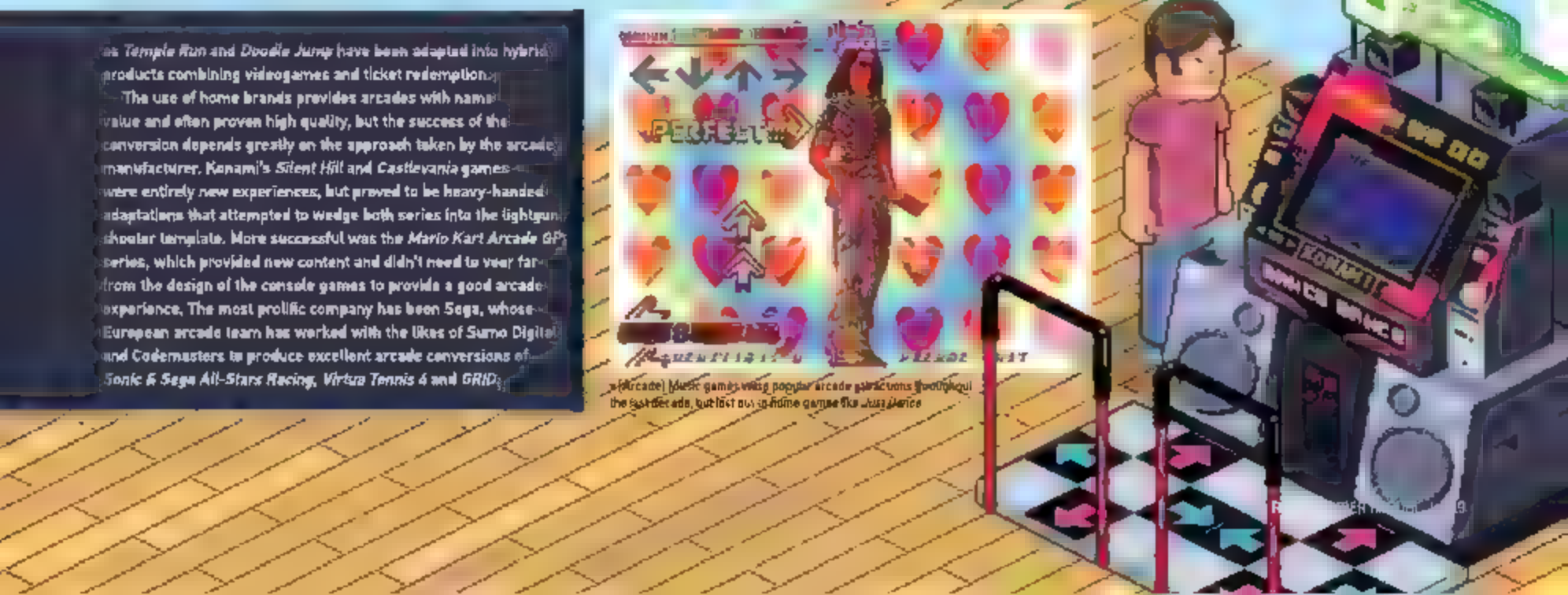
"It is always fun to see a player totally destroyed"

Eugene Jarvis

...as *Temple Run* and *Doodle Jump* have been adapted into hybrid products combining videogames and ticket redemption.

The use of home brands provides arcades with name value and often proven high quality, but the success of the conversion depends greatly on the approach taken by the arcade manufacturer. Konami's *Silent Hill* and *Castlevania* games – were entirely new experiences, but proved to be heavy-handed adaptations that attempted to wedge both series into the lightgun shooter template. More successful was the *Mario Kart Arcade GP* series, which provided new content and didn't need to veer far from the design of the console games to provide a good arcade experience. The most prolific company has been Sega, whose European arcade team has worked with the likes of Sumo Digital and Codemasters to produce excellent arcade conversions of *Sonic & Sega All-Stars Racing*, *Virtua Tennis 4* and *GRID*.

▲ [Arcade] Music games using popular arcade games throughout the golden era, but last out in mine games like *Just Dance*



THE BEST ARCADE IN THE WORLD

Funspot arcade in New Hampshire, USA, is a glorious reminder of the days when arcades ruled the gaming world. We report from retro gaming heaven

FUN FOR THREE

BOB LAWTON
OWNER AND FOUNDER OF FUNSPOT

■ Bob opened up the first Funspot in '78 with his brother [illegible] who sadly passed away in 2003. During the boom years of the Eighties, they ran Funspot arcades across New Hampshire and even as far afield as Florida.

GARY VINCENT
FUNSPOT MANAGER AND ACAM PRESIDENT

■ Gary took a summer job at Funspot in '98 and never left. He was instrumental in creating the museum and he still spends many hours restoring old cabinets, ready to bring them onto the arcade floor.

MIKE STULIR
[illegible]

■ Mike is one of the many [illegible] time to making ACAM such an extraordinary place. "I want [illegible] Americana are here for future generations to see and enjoy," he says, proudly.

Bob Lawton puts the [illegible] cockpit cabinet and smiles. "We paid $11,000 for this in April 1987, which was a huge amount of money back then. By 1 July that year, it had paid for itself! People were queuing up to play it!"

Bob, the founder and general manager of Funspot, can talk about many of the machines in his colossal arcade – officially named the biggest in the world by Guinness World Records in 2006 – as if it were an old friend. And Bob has a lot of friends. Over 600 machines are spread across three floors and walking through the building is like [illegible] of arcades. You'll spot ancient mechanical machines from the Sixties, scores of pinball tables and even one of those 'Love Tester' gadgets.

There's a whole mini-golf course, too; a sweet nod to the [illegible] Bob is [illegible]

Bob, fresh from graduating with a degree in chemistry, [illegible] test tubes for golf clubs and built a course on the second floor of the Tarleen building in Weirs Beach, New Hampshire, a short walk from Funspot's current home. In partnership with his brother John the pair built up the business over the following two decades, adding rifle galleries, a skee-ball alley and numerous other arcade attractions. Then one day in the mid-Seventies, in walked an animated Italian, who began gesticulating wildly.

"He was waving his hands and saying, 'Let me get rid of all this junk and put in some good games!'," laughs Bob. "He was [illegible] Tank. That one machine took more than the whole room of nickel and dime games we had. It showed us what videogames were going to do. I loved that guy. We stayed with him for years."

So Funspot rode the videogame wave from the pioneering Seventies through the Golden Age of the Eighties and into the last real hurrah of arcade cabinets in the Nineties. And they're all still here for gamers to enjoy. Classics like *Robotron* and *Asteroids*, obscurities such as *Space Fury* and *Quantum*, monsters like the *G-Loc* full-motion 360 cab and a row of linked-up *Daytona USA* machines.

» Bob Lawton (far right) regales his nephew Steve (centre) and RG's Paul Drury with tales from the arcade business.

» They just don't make upright driving cabinets anymore.

» [illegible] game on, and, anything...

» ACAM boasts over 300 cabinets, from old favourites to real rarities.

» Controversial game *Death Race* coexists with the inoffensive *Pong*.

We may be spoilt these days by having access to all these titles via downloads and emulation, but nothing beats the thrill of playing your favourites on an original cabinet in their natural arcade habitat – a habitat that has sadly almost vanished.

"I was noticing classic games were disappearing and arcades were disappearing," explains Gary Vincent, general manager and part of the Funspot family for over 30 years. "So at a staff meeting in September 1998, I asked if I could gather all the older games together, like a museum to celebrate the history of gaming."

Gary's idea slowly evolved into the American Classic Arcade Museum or ACAM for short, a superlative collection of over 300 classic arcade games housed on the top floor of Funspot. Walking along the aisles of cabinets, admiring a pristine *Death Race*, smiling at the *Pac-Man* machine on which Billy Mitchell famously (or infamously, if you know the back-story) achieved his 'perfect game' and stopping for a sit-down on *Buck Rogers* is a magical experience. Even the lighting, décor and background music has been lovingly chosen to recreate the arcade as it was in its Eighties heyday. "It brings back memories of when I first started here," says Gary, wistfully. "All the sights and sounds I remember from my first summer working here in 1981. It's kinda cool."

"Gary's a visionary," enthuses Mike Stulir, who sits on the board of directors of the museum. "He can recognise good ways to entertain and inform the public. We have students from computer development programmes use us as a resource. One college eliminated one of their course textbooks on the basis of what they could learn from us. Last time they visited, they brought three busloads of students to come and find out about gaming in the old days!"

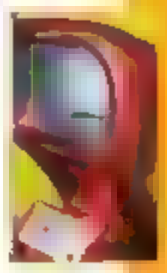
Who said learning can't be fun? Whether you want to explore the history of videogaming or simply enjoy playing all the machines that consumed your pocket money as a child, ACAM is an essential visit for retro gamers. It's open all year round, though you may want to consider visiting during its annual International Classic Videogame Tournament in late May. Now in its 16th year, the event attracts the cream of arcade gamers from around the globe, meaning you can test your high-scoring skills against numerous world record holders or at least grin as you spot famous faces from such films as *King Of Kong* and *Chasing Ghosts*.

When you do get to finally walk through the hallowed doors of this gaming mecca, make sure you check out the 'Retro Gamer Wall', where you'll find past articles on Funspot taken from our pages, and then seek out Bob Lawton himself and say we sent you. Despite being in his 80s, Bob still opens up the arcade every day and always provides a warm welcome. "I just love working," he laughs over a beer in the arcade's DA Long tavern, named after his grandfather. "My family all work here too. It's my life!"

For more on this marvellous place, see www.funspotnh.com.

MUST PLAYS

COMPUTER SPACE 1971

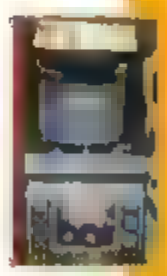


■ This is where it all started. Inspired by the mainframe game *Spacewar*, Nolan Bushnell and Ted Dabney created their own simplified version, which became the first commercially produced cabinet. This sleek cabinet looks impressive, especially set opposite Atari's *Pong*.

INDY 4 1976

■ This imposing four-player racing game greets you at the top of stairs as you enter ACAM and it's a poignant reminder of the arcade's long history. "It was the third videogame we got after *Tank* and *Seawolf* and during the summer of 1976, it was taking $140 a day," smiles Bob.

DOMINO MAN 1983



■ An excellent example of creative cabinet design, this game features a moustached, balding artist, who would soon swap his dominoes for beer mugs in *Tapper*. One of the many donations to the Museum since its official launch in January 2000, this one came from Randy Lawton, Bob's nephew.

WACKO 1983

■ No, you are holding the magazine correctly. "This is from that era when manufacturers would do anything to make their game stand out," remembers Gary. "It must have cost lots more to make it crooked like that. I love that people went the extra mile with a bizarre cabinet like this."

SPACE HARRIER 1985

■ A compelling reason for why nothing beats playing a game on the original hardware, this full-motion cockpit cabinet tosses you through the Fantasy Zone with gay abandon. Modelled here by *Missile Command* champ Tony Temple, who put his back out shortly afterwards. Is the game worth the injury? Yes.

RAMPAGE

Smashing buildings, crushing vehicles and eating people are activities generally reserved for gaming's antagonists, but Rampage's mutated monsters never cared much for the rules. We take a look back at the series that let you be the bad guy...

Boom! You feel your home violently shaking, the intermittent pattern of intensity telling you that this is no earthquake. Crash! A humongous, hairy hand breaks through the outside wall of your house and takes hold of you. Whoosh! The sound of air rushing past your head is the last thing you hear as you're tossed up toward the sky, only for the inevitable force of gravity to take hold and plummet you into the mouth of an impossibly enormous wolf.

It's a pretty grim end, and one of the many seen in *Rampage*. Cars are flung into billboards, people are kicked across the screen like screaming footballs, and heavily populated buildings are reduced to rubble. This is destruction on a massive scale, with body counts to rival anything that Hollywood puts out – and it's all your doing. Rather than bringing down the gigantic monsters, your job is to take control of them. If ever you watched *King Kong* and felt bad for the big beast, *Rampage* represents your chance to take revenge.

It's a theme that has enormous cultural resonance thanks to the popularity of giant monster movies, which makes it somewhat surprising that the idea to exploit the theme only came about due to technological factors. "*Rampage* was the result of my unwillingness to take 'not possible' for an answer," explains Brian Colin, then an artist at Midway. "Our system's foreground resolution was higher than any of our arcade competitors, and our foreground sprites could move freely around the screen. But our low-resolution background images were never designed to do anything but provide a single static title page."

"During a post Trade Show discussion with some of the hardware guys, I was told that, unlike some other games of the period, animated backgrounds were not possible with our current hardware. So while discussing the limitations of the current game hardware with some co-workers, it occurred to me that our hardware's annoying rectangular block movement constraints were ideally suited for only one thing: a building collapsing upon itself. It was only a small step from buildings falling down to players smashing buildings, to giant monsters laying waste to entire cities... which was enough to convince me that we had a potential blockbuster on our hands."

The power of this premise is well-known today, but it's fair to say that not everybody was as enthusiastic as Brian when the game was pitched.

"Middle management was skeptical about doing a game in which the player was the bad guy, and shot the game down for being too unusual," he recalls. "Again, unwilling to take 'no' for an answer, I went directly to the office of the new president of Bally/Midway (Maury Ferchen) who, needless to say, loved the unique concept. The green light was given, and the game went on to break all previous arcade earnings records."

The premise of *Rampage* was delightfully simple. Taking control of George, Lizzie or Ralph (respectively a gorilla, a lizard and a wolf), up to three players were tasked with punching buildings, eating bystanders and crushing the puny tanks and helicopters sent out in the vain hope of halting your destruction. Each stage, represented as a 'day' in the monsters' long campaign of destruction, required all of the buildings on the screen to be demolished.

The game's multiplayer aspect proved to be the hardest part to get right. "Because people found themselves playing with total strangers who could join in at any time, it became evident early on that there should be no 'wrong way' to play this game. The biggest challenge from a gameplay standpoint was making sure that the game felt like a 'free-for-all'," recalls Brian. "Part of the joy of being a giant monster is that there are no rules that apply to you." To properly convey this sense of chaos, players were allowed to attack one another

CONVERTING THE CARNAGE

Kenneth Hurley explains how he brought Rampage to home formats

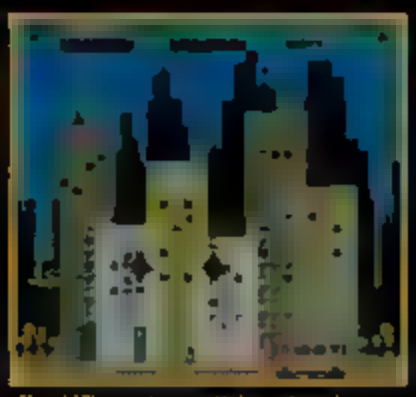
How much access did you have to the original game?
I was able to get the all the source code for the original game, which was written in 100 per cent assembly language. Luckily I knew 6502 and 68000 at the time, so I could easily read the Z80 code. In general the only thing that was useful from the code was the trajectory code for the thrown dynamite and the level layouts.

How much of a challenge was the Apple II version?
The Apple II version was quite the challenge but only because of trying to make it fast enough to run on it. In the end I wasn't completely satisfied by the frame rate, but Activision said it was good enough to ship and the business decision was made to ship it. It took me about two weeks to hand-translate all the source code from 8086 to 6510 for the Apple II. The total time was about three weeks to port my 8086 PC game to the Apple II.

What benefits did the PC and Amiga offer you?
The PC was the biggest challenge, as I had to write audio systems, keyboard, and several graphics drawing systems. Back in those days, you had to write 2D blit routines for CGA, TGA, EGA and VGA. I learned my lesson from hand-porting the Apple II game and with a friends help learned about Lex and Yacc which were tools to build compilers. They can also build translators, so we built an 8086 to 68000 translator in about two weeks and 90 per cent of the code was done. I then built the graphics functions and audio functions. The Amiga was sort of a hassle because of the Intuition operating system. I decided to throw it out and go directly to hardware, since Intuition was unbearably big and unwieldy to use.

Is it true your source code was used for the Master System version? How did you feel about that?
Yes, I think it was. I think that is great. I recently went back to look at some of my old assembler code and was amazed how clean and object oriented it is. I also used to comment on every single line in assembly language. I'm sure the Master System programmers were very appreciative of that.

» [Arcade] News updates between stages would occasionally provide hints for observant players.



» [Arcade] The monsters revert to human form when defeated. In multiplayer, you can eat your friends!

just as readily as the targets they were meant to destroy, which created interesting multiplayer dynamics. "Some players played cooperatively, some competitively, some gleefully switched from one gameplay style to the other depending on the situation."

There was more going on in the game, too. Civilian vehicles never needed to be crushed – but you could certainly do it. The train in particular was a favourite, as players could play train tennis, kicking it back and forth between each other. "The chaos worked in our favour, from a gameplay standpoint," explains Brian. "We didn't have to unleash a frustrating, impossible-to-beat super boss on the players... the tiny little bullets and the player's own clumsy mistakes would eventually bring them down."

Rampage was a major success upon its release in 1986, to the point that one arcade in which the game was tested actually asked for it to be removed due to the enormous crowds surrounding it. The game was widely converted, receiving versions for a range of systems from the ageing Atari 2600 through to the 16-bit computers. Our picks of the ports include the ZX Spectrum, Lynx, Master System and Amiga versions. With such success you'd image that a sequel was inevitable, but while *Rampage* did eventually receive one, it took a rather long time for it to arrive.

In the years that followed the release of *Rampage*, Midway was acquired by Williams Electronics and only two of its staff members remained – Brian and programmer Jeff Nauman. The two friends left Midway after a few years and formed Game Refuge, developing games such as *General Chaos*, but never broke contact with their former employer. *Rampage World Tour* was born during a visit to Midway's offices, as Brian explains: "one of the senior executives began complaining that they had no games that appealed to a 'broader demographic'. They had the adolescent male covered, he said, but what they needed was 'something that appealed to everyone else...'" The answer was obvious to Brian and Jeff – a new *Rampage* was needed. For the rest of us, it might need a little more explanation.

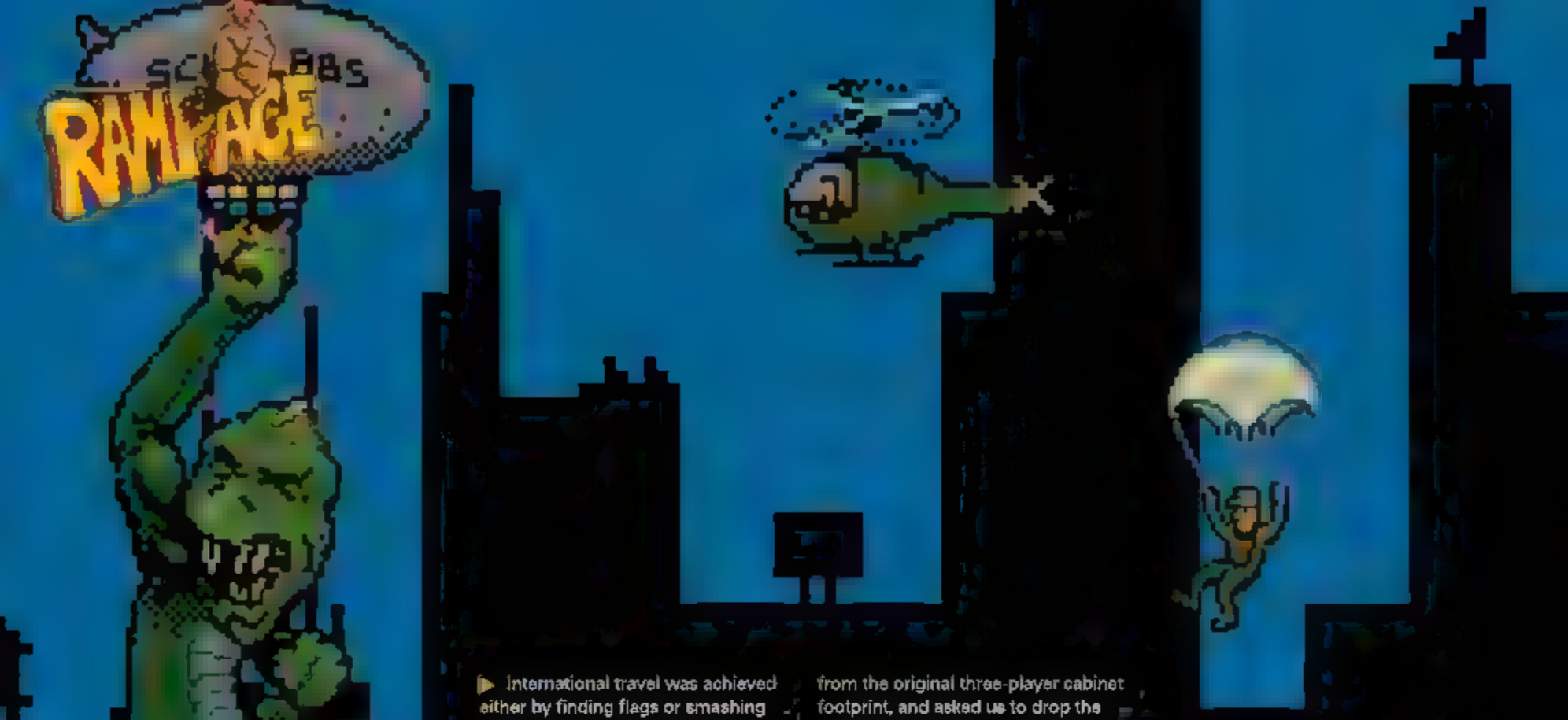
"*Rampage* had a much broader demographic appeal than other games of the day," Brian tells us. "The cartoon violence and tongue-in-cheek humour gave it a universal appeal. Little kids could play alongside teenagers, adults could play with their kids, and even (gasp) girls could and would jump on and pummel their annoying brothers and boyfriends." Preserving that sense of humour was key, which resulted in the cartoonish characters with a claymation-esque appearance.

This time around, the wrecking crew took their destructive exploits worldwide to smash the bases of Scumlabs, the antagonists from the original game, whose plot was expanded in the sequel.

▶[Arcade] The carnage is turned up to 11 in *Rampage World Tour* – George is bouncing on a building here.

> **"The cartoon violence and tongue-in-cheek humour gave it a universal appeal"**
> Brian Colin

▶[Arcade] The newspaper – a lemonningly crab as longer animation sequences such as the new level up during Tibor



International travel was achieved either by finding flags or smashing tourism billboards, and resulted in a mini-game in which the crew jumped on a plane and collected mid-air items. There were other enhancements, too: monsters were now able to kick buildings, taking out whole floors at once, and could bounce on girders in certain half-wrecked buildings. The ability to punch the top of a building also proved useful, especially as the new scrolling level format allowed for more buildings in a single stage.

But the most surprising new addition to the gameplay was VERN (short for Violently Enraged Radioactive Nemesis). VERN was a flying, highly powerful secondary mutation of any of the three main characters, a desirable power-up who had his origins in one of the game's scrapped features. "Initially, Midway executives wanted to make *Rampage World Tour* a four-player game, so a fourth player character was called for," recalls Brian. "However, a few months into development, they decided that they didn't want to stray from the original three-player cabinet footprint, and asked us to drop the fourth monster. So we decided to turn VERN into a mutation of a mutation, so to speak."

Rampage World Tour's successful arcade release in 1997 ensured that it received conversions to all the major formats of the day. The PlayStation, Saturn, N64 and PC all received conversions which were close to the arcade original, while the Game Boy received a basic conversion which boasted enhanced visuals on the new Game Boy Color. The project was a financial success for Midway and a sequel was on the cards, but Game Refuge's vision of a 3D *Rampage* was a more ambitious project than the publisher was willing to consider. Rather than work on a substantially similar game, Game Refuge left Midway to get on with it itself, with the development duties for the eventual console-only sequel falling to Avalanche Software.

Rampage Universal Tour introduced fans to a brand new cast of characters. Boris, Curtis and Ruby (respectively a rhinoceros, a mouse and a lobster) had to venture across the world to free the original trio, as they had been locked away in thematically appropriate locations. Once they'd been freed, aliens invaded Earth and it was up to the team to stop them. When they reached Area 51, they discovered and rescued a new monster, the alien cyclops Myukus, before taking their rampage into space and finally to the home planet of the aliens.

In design terms, *Universal Tour* was not a major departure from the template established by *World Tour*. The main addition to the game was the inclusion of a special move for each character, which could significantly speed up the process of destruction. Special moves could only be performed after eating enough people to fill the newly-included special meter, encouraging the monsters to take more regular snacks during gameplay. The other addition was new mini-games to break up the various stages, ranging from timed demolitions to people-punting contests.

However, the actual demolition, which still made up the bulk of the gameplay, was barely advanced from *Rampage World Tour*. Although the PlayStation version allowed for multitap support, bringing it up to parity with the N64's three-player action, the general lack of improvements resulted in a poor critical reception for both versions of the game upon its launch in 1999. The Game Boy Color version, meanwhile, was an improvement over its predecessor, with better visuals and gameplay that was closer to the full-size console versions. Sales remained strong, prompting Midway to press ahead with the series.

Again developed by Avalanche Software, *Rampage Through Time* was a PlayStation exclusive which represented the culmination of the trilogy that began with *World Tour*. Having smashed every building on Earth and then spread the destruction across the entire known universe, there was only one frontier left for our daring demolitionists: time. Having failed to deal with the mutants in the present, Scumlabs invents a time machine to undo the accidents that resulted in their creation. Unfortunately for the careless chemical company our protagonists find and enter the

[PlayStation] Ruby is one of *Rampage Universal Tour*'s new characters, and has appeared in every game since.

[PlayStation] The destruction of Pyongyang usually proves to be a sensitive matter...

[PlayStation] Boris is our favourite of the new breed, due to his excellent charging special attack

MONSTERS AT LARGE!

GEORGE, LIZZIE AND RALPH WEREN'T THE ONLY MONSTERS TO GO ON A RAMPAGE...

WT - RAMPAGE: WORLD TOUR · UT - RAMPAGE 2: UNIVERSAL TOUR · TT - RAMPAGE THROUGH TIME · TD - RAMPAGE: TOTAL DESTRUCTION

LITTLE MONSTERS

We talk to Cathryn Mataga about cramming Rampage Universal Tour onto handheld hardware

How did you come to work on *Rampage Universal Tour*?

I was looking for programming work, and a headhunter suggested Digital Eclipse. This headhunter told me they had worked on all kinds of old games, and back in those days I was already a game business old timer. Really, I think the headhunter was slightly confused, because Digital Eclipse had developed emulator packs for some old games, but wasn't the original developer of anything classic era.

We spent quite a bit of time on the phone trying to get the contract for this game going. During this time I put together *Shamus* for the Game Boy Color, and I wonder now, maybe getting this working convinced them I could pull off *Rampage Universal Tour*. I had programmed quite a bit of 6502 assembly language at this time, but that was my first game that was Z80 assembly.

DE was just a few miles away so even though I programmed this game at home, I could drive over there and talk to artists in a few minutes. I never had a Game Boy Color development system, but coded the entire game using hardware I bought from a company in Hong Kong.

Did you have any involvement with the developers who worked on the home console versions of the game?

I had a copy of the PlayStation version of *Rampage Universal Tour*, and I used this as a guide for how the Game Boy Color version should play.

What were the biggest problems from a technical point of view that you faced getting *Universal Tour* to run on a Game Boy Color?

This cart supported link cable, and link cable on the Game Boy Color was always a challenge. Not so much the programming of it, but fixing the bugs and testing was always so time consuming. Nintendo always extensively tested any link cable game, so if the game locked up or went out of sync, they would not approve it.

How do you feel the GBC version compares to the home outings?

It's way more limited, but considering the limitations of the hardware and the time we had to create this, I think it's a decent port. I think the link support is something that the publisher really wanted, and I feel good we were able to pull this off. The basic feel of the game is still there.

machine, thereby putting every building ever erected at risk of a right good punching.

The core gameplay deviates little from the previous two games in the series, with the same array of attacks available. Harley, a warthog monster, joins the cast alongside the original trio, the *Universal Tour* trio and Myukus. A large cast had become something of a necessity too, as *Rampage Through Time* ensured that three monsters took to every stage, with CPU-controlled players filling in empty slots. To break up the action, Avalanche included a selection of mini-games played at the end of each time period, including some excellent riffs on classic arcade games such as *Asteroids* and *Warlords*.

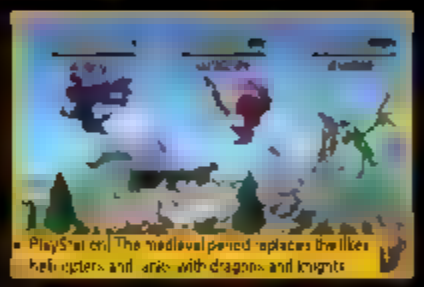
Unfortunately, not all was right with *Rampage Through Time*. The forced three-player action was a burden when the CPU got involved – the screen will only scroll when it's able to show all three players at once, but the AI doesn't always naturally move on in the way a real player would. Worse yet, it can be quite content to simply constantly attack you. The mini-games aren't simply a fun diversion either – failing to beat the CPU in these challenges causes an instant game over, meaning that they become must-wins. Combined with the repetition inherent to the *Rampage* template, these issues caused another negative reception. *Rampage Through Time* would be the last traditional *Rampage* game for a number of years, but it wasn't long before a spin-off arrived.

PlayStation. This *Asteroids* game – one of the many mini-games included in *Rampage Through Time*

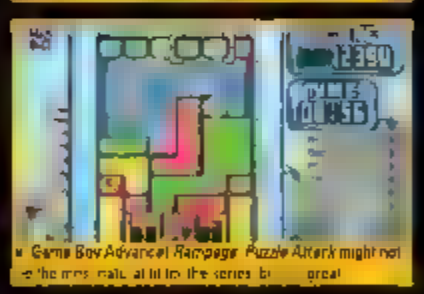
Late in 2001, our mutated beasts took an unusual diversion into the puzzle genre, courtesy of Finnish developer Ninai Games. *Rampage Puzzle Attack* is a Game Boy Advance game that plays almost identically to the developer's PC series *Drop Mania*. The top of the screen is lined with blocks, which can be switched around *Yoshi's Cookie*-style and dropped in pairs. Clusters of blocks can be cleared with clearing blocks of the same colour, much like *Super Puzzle Fighter II Turbo*.

A variety of play modes were on offer including standard marathon and preset puzzle modes, but the true *Rampage* feel came to the fore when liberating your fellow mutants in Rescue Mode. A cage containing one of the monsters is located at the bottom of each of the game's stages, and will only open when all the blocks on top of it have been cleared. Once they'd been rescued, the likes of Boris, Curtis and Ruby joined the classic cast as playable characters, but the characters have no bearing on proceedings at all. Nevertheless, the game stands tall as a very good puzzler on the Game Boy Advance, and one well worth tracking down. Despite the success, the beasts went into hibernation in the years that followed.

Upon their belated reawakening in 2006, Ralph, George and Lizzie were sighted in full 3D for the very first time. *Rampage: Total Destruction* marked the series' second major revamp, with a major visual shift made possible by the greater capabilities of the PlayStation 2 and GameCube.



PlayStation. The medieval period replaces the likes of helicopters and tanks with dragons and knights



Game Boy Advance. *Rampage: Puzzle Attack* might not be the most natural fit for the series but it's great

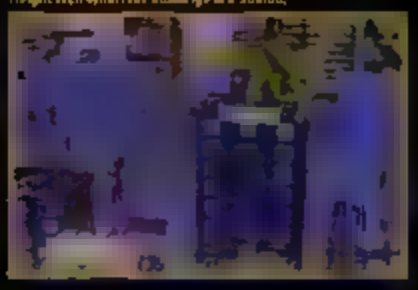
The classic trio of George, Lizzie and Ralph were available from the outset, alongside new faces Gilman, Ramsey and Rhett (a blowfish, a ram and a rat respectively). But the three new faces were the tip of the iceberg as the game introduced a huge number of new monsters, taking the cast to a grand total of 30, representing monsters both traditional and bizarre. Greater distinguishing characteristics were introduced with the new breed – for example Bart (a bat, naturally) could use his wings to aid his jumping tremendously.

Despite the shift to 3D visuals, the game still played in a similar manner to its predecessors, with level designs that may as well be 2D and buildings which fall straight down after taking a set amount of punishment. The major addition was the inclusion of boss stages. Taking place in the final area of each city, these involved taking out one of Dr Vector's powerful enemy craft in addition to destroying all of the buildings present.

Monsters retained the abilities gained in previous games, with kicks and special moves still available, but gained a few new tricks. The first of these was the ability to scale the front of buildings, rather than simply climbing the sides as in the 2D games, which allowed easier access to power-ups and tasty humans. The second was the inclusion of a specific grab button, which allowed players to grab hold of objects such as cars and chuck them into buildings, causing huge damage.

» [GameCube] With 30 monsters (and 40 on the Wii), characters become increasingly outlandish.

» [GameCube] The new 3D visuals convey a sense of height well when tall buildings are scaled.



Upon its release in 2006, *Rampage: Total Destruction* received the series' warmest critical response since *Rampage World Tour*, aided by a budget price tag and the inclusion of both of the arcade games as bonus content. The large amount of characters and stages on offer was praised, but the general repetitiveness and failure to make significant advances on the original template once again drew criticism.

Rampage: Total Destruction was ported to the Wii in time for the system's November 2006 launch. This version added ten more characters, including Ruby, Boris and VERN, plus an extra city. Unfortunately, the game failed to support the GameCube controller. The new control options were passable with the Nunchuk attachment but woeful without, due to the decision to utilise motion controls to simulate a joystick. The additional problems caused by the motion controls ensured that the game met a frostier response than the other two versions had just months prior.

Since Midway's bankruptcy in 2009, the series has lain dormant. That's not a situation that is guaranteed to last, though – while it has sometimes suffered outside of its native arcade environment, the *Rampage* series has maintained a following for decades. When asked to explain the appeal, those who have worked on the series never have to think for too long. "It's one of those games [where] you can just jump in and have mindless fun," says Kenneth Hurley, who produced conversions for Activision. "You can play it for five minutes or you can play it for hours. As a kid, who didn't have fun wrecking things?" Cathryn Mataga, programmer of the Game Boy Color version of *Rampage Universal Tour*, homes in on the theme of the game. "It was the characters and the humour. Players felt a bit of guilty pleasure from squishing and eating people."

"Perhaps it's the empowering aspect of being the anti-hero, or the unique absurdity of the theme, or simply that there was no 'wrong way' to play it," opines Brian, who was convinced of the game's thematic appeal before it went out on test. "The thing I remember most about watching people playing *Rampage* at the arcade was that it was not uncommon to see players laugh out loud as their once-powerful characters shuffled naked from the screen. *Rampage* was simply about having fun." And fun, if you ask us, is what a classic game is all about.

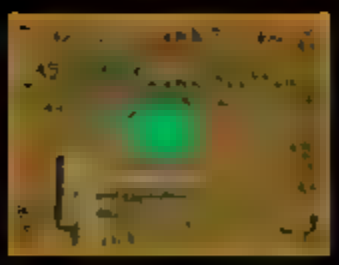
» [GameCube] Bosses such as this hover tank are the main gameplay addition for *Rampage: Total Destruction*.

> "Players felt a bit of guilty pleasure from squishing and eating people"
> Cathryn Mataga

IT'S GOOD TO BE BAD The games that let monsters take revenge

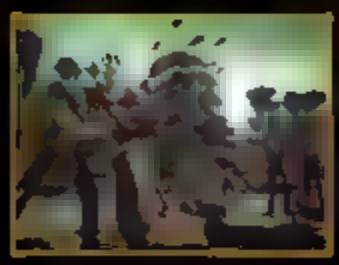
THE MUNCHER 1988

Originally known as *T-Wrecks*, a promotional tie-in with Chevrolet made this demolition derby rather more cuddly than originally intended. The premise is very similar to *Rampage*, as you control a huge dinosaur sprite and smash up cities. The main difference is in plot, the dinosaur being motivated by having its eggs stolen.



THE OOZE 1995

Dr Daniel Caine has discovered a terrible secret at The Corporation and plans to blow the whistle, but instead meets what appears to be an untimely end drowned in chemical waste. However, he simply becomes the game's titular green ooze, and swears revenge against his morally bankrupt former colleagues.



STUBBS THE ZOMBIE IN REBEL WITHOUT A PULSE 2005

Eddie Stubbs had a rough life, eking out a living as a salesman in depression-era America before meeting his end. Death provides ample opportunity for revenge, especially due to the natural army-gathering capabilities zombies have.

DESTROY ALL HUMANS! 2005

Destroy All Humans! is a little less revenge and a little more rescue mission, as our protagonist Crypto is trying to rescue a wounded compatriot from the American army. The action soon escalates, and Crypto ends up taking his battle to the very top of the US government.

SPACE INVADERS GET EVEN 2008

Though it was released in 2008, any retro gamer should be able to figure out what's going on here – the citizens of Earth have turned on each other and the invaders have spotted an unmistakable opportunity. Your job is to use the UFO to wreak havoc upon cities worldwide.

15 years after the series first blasted The Offspring into arcades, we flagged down Kenji Kanno to chat about Sega's hit driving franchise

Dear reader, allow us to set the scene for you. It is 1:24 on a Saturday morning in Essex, where a man is disembarking from a cab outside his house, visibly shaken.

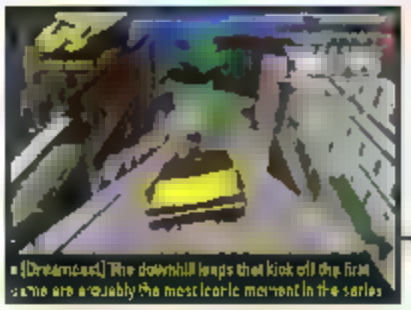
This man has just completed a 12-minute journey home in half that time, thanks to a driver whose skills include an incredible aptitude for paint-scraping near misses and an inability to see red lights. The driver's heavy Glaswegian accent rendered most of his chatter unintelligible to the passenger, and while the passenger shared the sentiments he understood, they are unsuitable to print in a publication like ours. Any normal person leaving this cab would note the number plate and report it to the authorities, but the passenger wasn't normal – the passenger was us, and instead we simply thought 'this is probably the closest we'll ever get to being in *Crazy Taxi*'.

For the more law-abiding drivers amongst us this kind of action is a mere fantasy born of M25 tailbacks, and a congested road is where inspiration struck. Sega's Kenji Kanno – in a bit of a car enthusiast, and one day was out driving for fun but got stuck in traffic," Kanno tells us. "But the other side of the road was completely clear. When I saw that, I thought there must be hundreds of other people thinking like me – if I could drive on the other side of the road, I could have a lot more fun and get there quicker." That fleeting feeling of rebellion against the rules of the road became the basis for *Crazy Taxi*'s death-defying driving action, but it was far from the only influence that Kanno drew from. "At the time, there were a lot of racing games. To be honest, I was quite tired of them," he reveals. "There are a lot of films based on car action, I thought that if I could make a game that was like them, people would get a lot of enjoyment from it."

It's a revelation that is a little surprising given that racing games are a staple of the arcade market, but one that makes sense. Driving scenes in films had also inspired the development of *Driver*, a title that joined *Crazy Taxi* in laying the foundations for the open-world driving subgenre. But where *Driver* had been inspired by the classic car chase movies of the Seventies, *Crazy Taxi* drew on more contemporary influences – not least California's punk rock scene whose output would prove crucial to the game's development due to Kanno's design philosophy. "Although this is seen as a racing game, I always

THE HISTORY OF CRAZY TAXI

▪ [Dreamcast] Frequent collisions are a staple of *Crazy Taxi* – the only car you can't flip is your own.



▪ [Dreamcast] The downhill leaps that kick off the first game are arguably the most iconic moment in the series.

> "It succeeded because it offered something that other games at the time weren't offering"
>
> Kenji Kanno

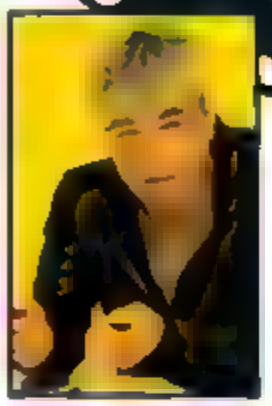
▶ intended to create it as an action game and with action games it's all about rhythm and tempo," he explains. "Before making the game, I actually already had the music that I wanted in the game set first, and then had the creators go away and design the game around the music, so that the rhythm would be in sync with the music."

The California spirit didn't just extend to the inclusion of The Offspring and Bad Religion on the soundtrack. Kanno's desire for a bright and hilly environment resulted in an environment based on San Francisco, and while it wasn't an accurate recreation of the city, it did include real-world locations. "I wanted it to have a sense of realism," Kanno recalls, "the best way to get that across, I thought, was to have places that people would relate to." Passengers would frequently ask to be taken to destinations such as Tower Records, KFC and Pizza Hut, as well as the game's generic locations such as the stadium, the police station and the mall.

These appealing factors ensured that *Crazy Taxi* quickly became an arcade staple when it launched in 1999. Players were grabbed by the bright visuals, driving stunts and an attract sequence that literally cried out for players to have some fun with the game. However, they were kept around by the addictive game mechanics. Driving dangerously wasn't just encouraged but rewarded, with players gaining additional tips on their fares for near misses, drifts and jumps. Although the customer's destination would remain a secret until they were picked up, coloured icons above their heads would alert you to the distance and difficulty of their desired journey.

Important, because a quick journey rewards players with additional seconds on the clock.

Having experienced success with the coin-op, Sega was keen to get the game onto the Dreamcast quickly. Although the title shipped on the NAOMI arcade board – essentially, a modified Dreamcast – the conversion still posed some problems due to the size of the city environment. In the arcade, the



▪ Kanno is an enthusiastic interviewee, clearly pleased that *Crazy Taxi* retains its strong appeal.

EXTREME EMPLOYMENT

Crazy Taxi wasn't the only game to intensify a mundane job

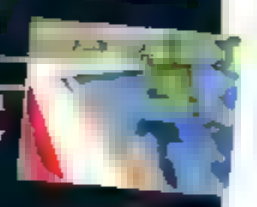
BURGERTIME

■ ARCADE ■ 1982

Poor old Peter Pepper puts up with some nightmarish working conditions in Data East's arcade classic. The poor chef is trying to put together burgers while being chased by anthropomorphic eggs, hot dogs and pickles. We don't imagine staff at McDonald's are forced to put up with murderous food...

POWER DIGGERZ

■ PLAYSTATION ■ 2000



JCB drivers already have a sweet deal thanks to the awesome power of their vehicles, but this overlooked gem makes construction equipment even more fun than normal. Destroying cars, scooping turtles from swimming pools, serving 200 litres of slurry onto giant plates – Taito's game lets you do all this and more...

SEGAGAGA

■ DREAMCAST ■ 2001

Sega's Japan-only RPG lets you take charge of Sega in the year 2025, by – which time it has become just a tad different. Developers are locked behind gigantic blast doors producing games like *Final Pharmacy VII*, and are occasionally required to blast into space to fend off attacking Sega hardware...

PHOENIX WRIGHT: ACE ATTORNEY

■ GAME BOY ADVANCE ■ 2001

Being a lawyer might not sound like the most exciting thing in the world, but Phoenix Wright's cases are full of shouting and table-banging – and that's before any of the game's spirit mediums get involved. At one point, you'll even need to bring a parrot to the stand for cross-examination...

TRAUMA CENTER: UNDER THE KNIFE

■ NINTENDO DS ■ 2005

Extraordinary healing powers gained from the Greek god Asclepius are only the start of the weirdness in this surgery simulator from Atlus. The plot sees you taking on a man-made disease known as GUILT, being spread by an organisation of terrorists whose leader is 121 years old...

▪ [Dreamcast] *Crazy Taxi*'s sense of humour even extends under the steam, where snorkel-wearing passengers await.

open driving environment wasn't such a large issue because the NAOMI had the benefit of loading the game from cartridge and twice as much RAM as the home system. To overcome the Dreamcast's limitations, Kanno's team had to program a method of streaming city data from the disc during gameplay. It proved to be worth the effort, as the Dreamcast conversion proves virtually indistinguishable from the original arcade game.

As well as being a practically perfect port, the Dreamcast version of *Crazy Taxi* included additional features. Most prominent was the Original Mode, which allowed players to enjoy a brand new city with a twisting street section and a railway. There was also the Crazy Box Mode, a selection of driving mini-games, in which taxis were used to pop balloons and knock down bowling pins. Kanno asked the team to think independently about mini-game concepts outside of work, before coming together in the office to select the ideas that would be used in the game. "We looked at different elements of the game that could be scored against, like drifting or dashing," recalls the director, highlighting the mode's role in teach players advanced techniques. "It was something that people could play and have fun with, but also use as practice."

▲ [Dreamcast] Drifting is a speedy way to negotiate the 90-degree corners in downtown areas

▲ [Dreamcast] A good job will reward you with more money and a five second time bonus

▲ [Dreamcast] Drop-off points are indicated by these green markers, making your destination easier to find

Launching at the beginning of 2000, the Dreamcast version of *Crazy Taxi* received a massively enthusiastic response from the press, gaining acclaim for the quality of its conversion. Surprisingly, it's acclaim that Kanno himself had been unaware of. "I didn't actually know that it was regarded that way," he responded when asked for his thoughts on the game's reception. "I think the key reason that it succeeded is because it offered something that other games at the time weren't offering. Maybe it's down to who is giving that feedback." The public responded with equal enthusiasm, purchasing over 1 million copies and providing the Dreamcast with an early highlight in its lifespan.

But financial realities had hit Sega hard and just a year later the company announced its exit from the hardware business and made plans for its games to appear on the consoles of its former competitors. Acclaim licensed the game and developed PlayStation 2 and GameCube conversions in-house, while Sega contracted the development of the PC version to Strangelite. None of the conversions had the critical impact of the Dreamcast release, though the PlayStation 2 version eventually outsold its predecessor. Free of all the conversion work, Kanno's team at Hitmaker had time to produce something far more exciting – a *Crazy Taxi* sequel.

Despite its hardware woes, Sega never planned *Crazy Taxi 2* as anything other than a Dreamcast game. The basic formula of driving recklessly to get customers to their destinations hadn't changed, but the setting had as *Crazy Taxi 2* introduced four new characters and two new maps. Based on New York, these maps were dense urban environments with fewer natural hills, with roads bordered in by skyscrapers. This design played into the team's plan to give the player a new kind of control. "With *Crazy Taxi*, it was basically a lane-

▲ Confronted with a Dreamcast, Kenji Kanno tries to remember *Crazy Taxi*'s advanced techniques

"I wanted it to have a sense of realism. The best way was to have places people relate to"
Kenji Kanno

» Kenno's memory serves him well as he remembers how to reach some oddly-located fares

based game and you could only avoid by going left or right, so it was very much a 2D game in that sense." Kenno explains. "With *Crazy Taxi 2* we wanted to bring a bit more of a 3D element into the game, and the Crazy Hop is the result of what we were trying to achieve."

The Crazy Hop was a new ability introduced in *Crazy Taxi 2* which allowed taxis to jump. Though Around Apple and Small Apple didn't have a lot of hills, they made up for that with overpasses and rooftop shortcuts, allowing players with quick reactions to shave seconds off their times. What's more, the new mini-games in the Crazy Pyramid Mode made heavy use of the new addition, with jumping-based games such as Crazy Stairs. Another new addition was passenger groups. Up to four customers were now able to board your taxi, each with different destinations in close proximity to one another. Time limits for groups were noticeably strict, but expert players could rack up crazy money for taking them – as well as awarding larger fares, groups gave a multiplier on tips for each passenger.

While *Crazy Taxi 2* launched to good reviews in the middle of 2001, it didn't achieve the same level of praise as its predecessor. Critics praised the retention of the original game's manic action and the inclusion of more music from The Offspring, but felt that the game didn't do enough to improve over its predecessor, thanks to its near-identical visuals and minor gameplay enhancements. In fact, the most major change was the most controversial. "Some people find it difficult, some people find it really enjoyable, but we see it as a mixed reception," explains Kenno, talking about the Crazy Hop.

For purists, the thrill of dodging traffic was diminished by the ease of leaping over it – you'd receive tips regardless – but proponents of the mechanic enjoyed the additional shortcuts it provided. Despite the mixed reception, the Crazy Hop would carry over into the last of the major *Crazy Taxi* releases. *Crazy Taxi 3* was one of Sega's early exclusives for

» Kenno gesticulates while explaining the origins of the Crazy Hop mechanics from *Crazy Taxi 2*

▸ [Dreamcast] As well as a new city, *Crazy Taxi 2* brought a new set of cabbies – here's Slash in action.

▸ [Dreamcast] The environments are nice, but the tall buildings obscure Sega's blue skies.

Microsoft's Xbox. At the time it was a surprising choice of platform – it's easy to forget that the Xbox was something of an unknown quantity even as late as 2002, thanks to Microsoft's lack of experience in the console market. What's more, *Crazy Taxi* had already sold well on the PlayStation 2. However, Kanno tells us that it was the American company's enthusiasm for the series that influenced the decision. "We had a chance to talk to Microsoft about *Crazy Taxi* and they were really keen, they had a lot of love to show for *Crazy Taxi*. It was all about love."

Early plans for *Crazy Taxi 3* were more ambitious than for *Crazy Taxi 2*. Early interviews with Hisao Oguchi, who had served as producer on the first two games, mentioned that multiplayer had been experimented with but ultimately abandoned. Other plans included the addition of day and night cycles, so that customers and destinations would change as the day went on. The team undertook location scouting, even returning to previously used cities like New York. "I didn't want to go," Kanno explains of the trip, "but the designer did go on a really tough schedule. Exactly a week before 9/11 he was in the building. In that sense it's a location scout that left an impression. It's a bit eerie, isn't it?"

Unfortunately, these plans would not come to fruition. "As you know, in development we always have to battle between shipping what we really want to do, and the time that we realistically have set to complete the challenge," begins Kanno's response when asked about the scrapped features. "We didn't have an infinite amount of time to do everything and it's true that there were certain things that we wanted to do, but we couldn't complete within the time that we had." Ironically, these time ▶

> **"It's true that there were certain things we wanted to do, but we couldn't within the time we had"**
>
> Kenji Kanno

▸ [Dreamcast] Picking up multiple passengers is a risk, but success is highly rewarding.

• Crazy Taxi's director takes great care in explaining the careful design behind the series' reckless driving

▶ constraints would ensure that *Crazy Taxi 3* was the most conservative of the trilogy in design terms.

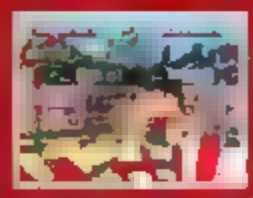
The final version ended up serving as a kind of greatest hits package, albeit one with significant additions. Two maps from previous games returned with updates. *Crazy Taxi*'s arcade map West Coast came back with some new areas designed to take advantage of the Crazy Hop, alongside *Crazy Taxi 2*'s Small Apple, now set at night. *Crazy Taxi 3*'s sole original map was Glitter Oasis, a Las Vegas-themed map set at night to allow the bright lights to take centre stage, with the outskirts including a canyon area. Four more new characters made their debut alongside the eight existing drivers, and another set of mini-games was on offer in the Crazy X Mode.

Crazy Taxi 3 arrived in the middle of 2002 to a reasonably positive but undeniably underwhelming critical response. While critics still generally enjoyed the game's core mechanics, the consensus was that the game just didn't bring enough new content to the table. The game also struggled on a technical level, with reviewers complaining of noticeable draw distance problems and prominent slowdown, particularly in the flagship Glitter Oasis stage. The 2004 PC conversion, once again handled by Strangelite, fared little better. However *Crazy Taxi 3* did manage to make a return journey to the arcade. Sega adopted the Xbox-based Chihiro board for arcade releases in 2003, and Kanno saw an unusual home-to-arcade conversion as the natural choice. "It seemed to be a natural fit, a case of 'hey, if we release this content, we'll have happy consumers'," he reflects.

RETURN JOURNEY

A look back at what Kenji Kanno did before Crazy Taxi

JURASSIC PARK

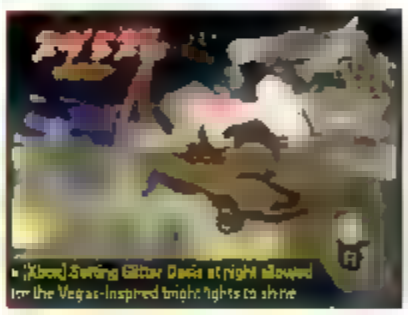


FUNKY HEAD BOXERS

TOP SKATER

In 2003, THQ acquired the rights to publish a Game Boy Advance version of Crazy Taxi. Developed by Graphic State Games, Crazy Taxi: Catch A Ride proved to be an awkward fit for the handheld system. Much like other attempts at 3D driving games on the system, Crazy Taxi suffered from blocky visuals and a poor frame rate and the game received a critical battering when it launched. Later that year, the series managed to make the news thanks to a patent infringement lawsuit. Sega sued Electronic Arts, Fox Interactive and Radical Entertainment over The Simpsons: Road Rage, a 2001 release that had been noted for its extreme similarity to Crazy Taxi. The lawsuit was settled out of court for an undisclosed sum soon after being filed.

In recent years, Crazy Taxi has been employed primarily as a nostalgic capacity. 2007's Crazy Taxi: Fare Wars was a PSP compilation of the first two games. While the game suffered the loss of licensed shops and music, it did benefit from the first-time inclusion of multiplayer modes. The original Crazy Taxi later found its way to Xbox 360.



• [Xbox] Seeing Glitter Oasis at night allowed for the Vegas-inspired bright lights to shine

• [Xbox] The remade West Coast map in *Crazy Taxi 3* included a whole new area built to utilise Crazy Hop.

CRAZY PYRAMID

Some of the best mini-games the series has to offer

CRAZY ARCHES
A right royal pain, this game requires careful use of the Crazy Hop to leap from arch to arch. Repeated drowning is probable.

CRAZY PARKING
Battle your way to the top of a packed multi-storey car park! The tight time limit here is a killer.

CRAZY SPECIAL
Crazy Taxi 2's final challenge is a nightmare: you must visit every drop-off point in Small Apple with a useless guide arrow.

CRAZY ZIGZAG 2
One of the tougher mini-games – seven passengers, 40 seconds and one narrow road in the middle of the ocean. Don't get wet!

CRAZY BOWLING
Drift into the pins to score seven consecutive strikes. It sounds simple but this mini-game proves deceptively tough.

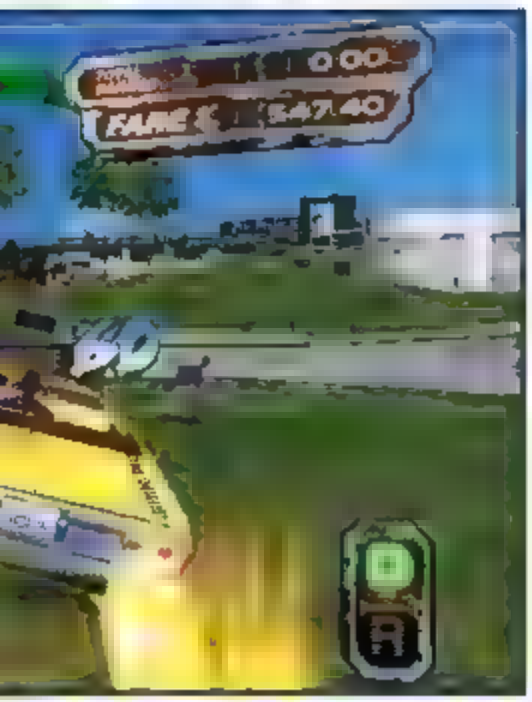
CRAZY STAIRS
Easy to explain, hard to master – hop up a series of ascending steps in order to reach the goal. Expect plummeting.

CRAZY BALLOONS
A classic, in which you chase balloons around and pop them. Another game that's made multiple appearances.

CRAZY HURDLES
This one's pretty easy, you just need to leap over the hurdles and reach the finish line. This one's good for score competitions.

CRAZY GOLF
You need to use Crazy Hop to drive a ball as far as possible – an easy but enjoyable task from *Crazy Taxi 2*.

CRAZY JUMP
A series staple appearing in all three games, Crazy Jump sees you hurling your cab off a ramp as far as possible.



PlayStation 3 and PC, again missing its licensed aspects. These versions did at least include an option to use custom soundtracks, for those desperately missing their Bad Religion fix. Versions for iOS and Android restored the soundtrack, but not the shopping.

The newest *Crazy Taxi* release to hit the market is *Crazy Taxi: City Rush*, a free-to-play mobile game which deftly combines the spirit of Sega's series with the runner format as popularised by games like *Temple Run*. "*Crazy Taxi* is in essence a casual game, but it's got this charm and allure that makes it really addictive," says Kanno of the decision to take the series in this brand new direction. "Because mobile is so widespread now, we thought that would be a perfect platform to go onto." The conversion has been handled by Hardlight, a UK-based Sega studio that specialises in games for mobile platforms – a decision which Kanno attributes to the game's greater popularity in the West.

While the game is unmistakably a part of the runner genre, it does contain some of *Crazy Taxi*'s signature mechanics – for example, players are still awarded Crazy Through combos for dodging between vehicles. But mechanical authenticity hasn't been the key for Kanno, who is more concerned with retaining the spirit of the series. As he puts it, "It's not really about the techniques, the technicalities or the mechanics, it's more about 'does it feel like a *Crazy Taxi*?'" In that regard, the game delivers, with original characters like Gena and BD Joe even making cameo appearances. *Crazy Taxi: City Rush* also introduces new gameplay elements, such as upgradeable taxis. Such advances seem core to

THE KNOWLEDGE

A cabbie's guide to picking up crazy money

BRING TERROR TO THE MALL BY DRIVING THROUGH IT

DON'T WAIT FOR THE END OF THE ROAD TO DO A U-TURN!

BEING ON THE ROOF IS TOTALLY PUNK ROCK, RIGHT?

KFC SHORTCUT – ANOTHER CUSTOMER YOU MIGHT MISS DOWN HERE

COOL GRANDMA, JUST CHILLIN' ON THE ROOF

MOTEL SHORTCUT – SMASH THOSE BOXES!

MULTI-STORY CAR PARK – AWESOME JUMP OPPORTUNITY!

RESCUE THIS LADY FROM HER BROKEN-DOWN CAR!

CHEEKY SHORTCUT – YOUR ONLY CHANCE TO CHANGE LANES HERE

WHAT'S THIS GUY DOING UNDERWATER?

Kanno's outlook on games, as he is firmly focused on the future.

This is a trait most evident when he's asked about what achievements he takes pride in. "To be honest, throughout *Crazy Taxi 1*, *2* and *3* I don't have anything that I'm particularly proud of," is the surprising response. "You probably interview a lot of people and for me, it's great that you've played our game and you've really enjoyed it," he continues, "but for me, as a creator, I'm always thinking about what's next."

Even so, *Crazy Taxi* has left its mark on gaming history. Well over a decade after the first arcade-goer was challenged to make some crazy money, the trademark action of the series still has an appeal that resurfaces any time a player sees a dangerous driver, just as it did for us. And, as his final anecdote reveals, it's an appeal that even Kanno has experienced first-hand: "I was in Las Vegas once, on holiday, and this taxi driver was just driving at breakneck speed to get me to my destination. And then, just as I was getting out of the cab, he said 'I'm *Crazy Taxi*,' but he didn't even know who I was. He was just some crazy taxi driver." We can only hope he was awarded the customary Speedy bonus.

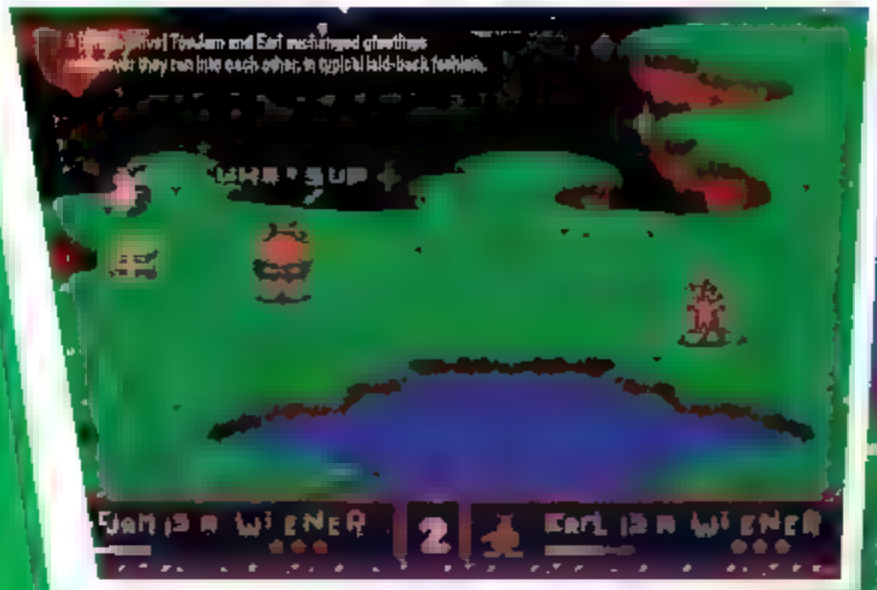
▲ [GBA] While the game design remained faithful, the GBA lacked the power to faithfully recreate *Crazy Taxi*.

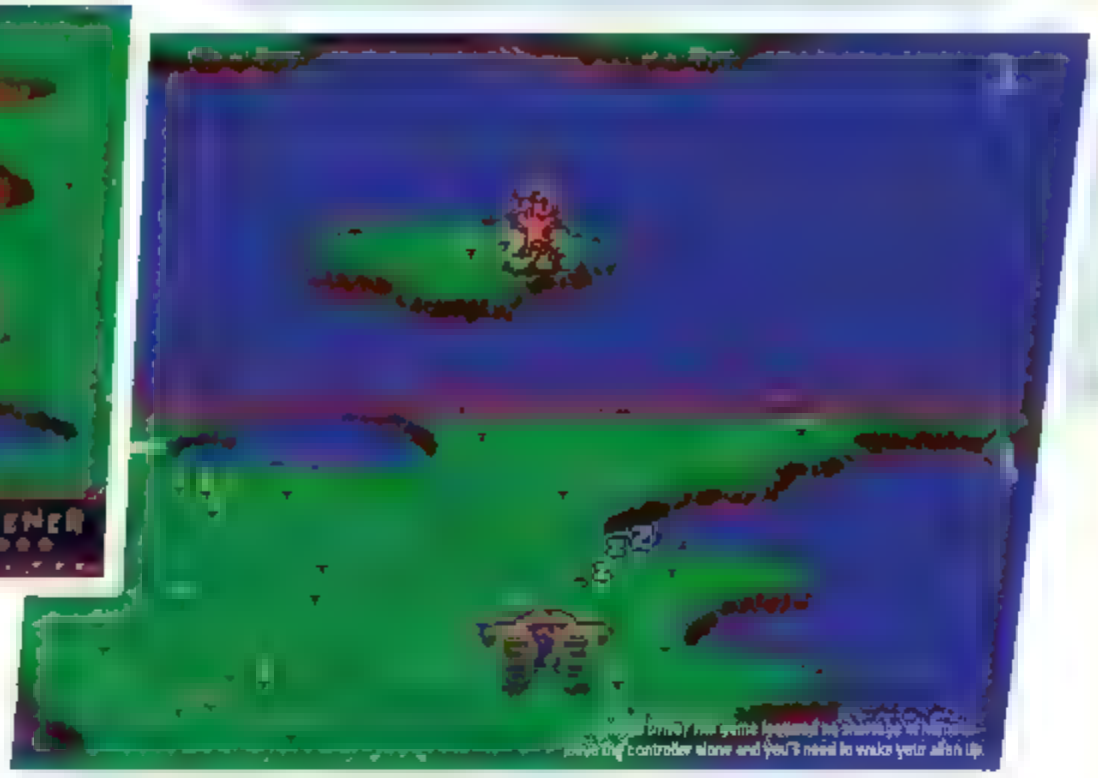
▲ [GBA] Leaping over traffic remains a key part of the gameplay experience in *Crazy Taxi: City Rush*.

▲ [iOS] The more overtly cartoonish visual style of *City Rush* marks a break from the rest of the series.

ToeJam & Earl

Gamers blast aliens. A simple statement, but one that has been true since the Seventies. So what happens when the trope is inverted by a pair of alien rappers who crash on Earth? The birth of a cult hit, if ToeJam & Earl is anything to go by. We talk to Greg Johnson about the story of two unlikely heroes



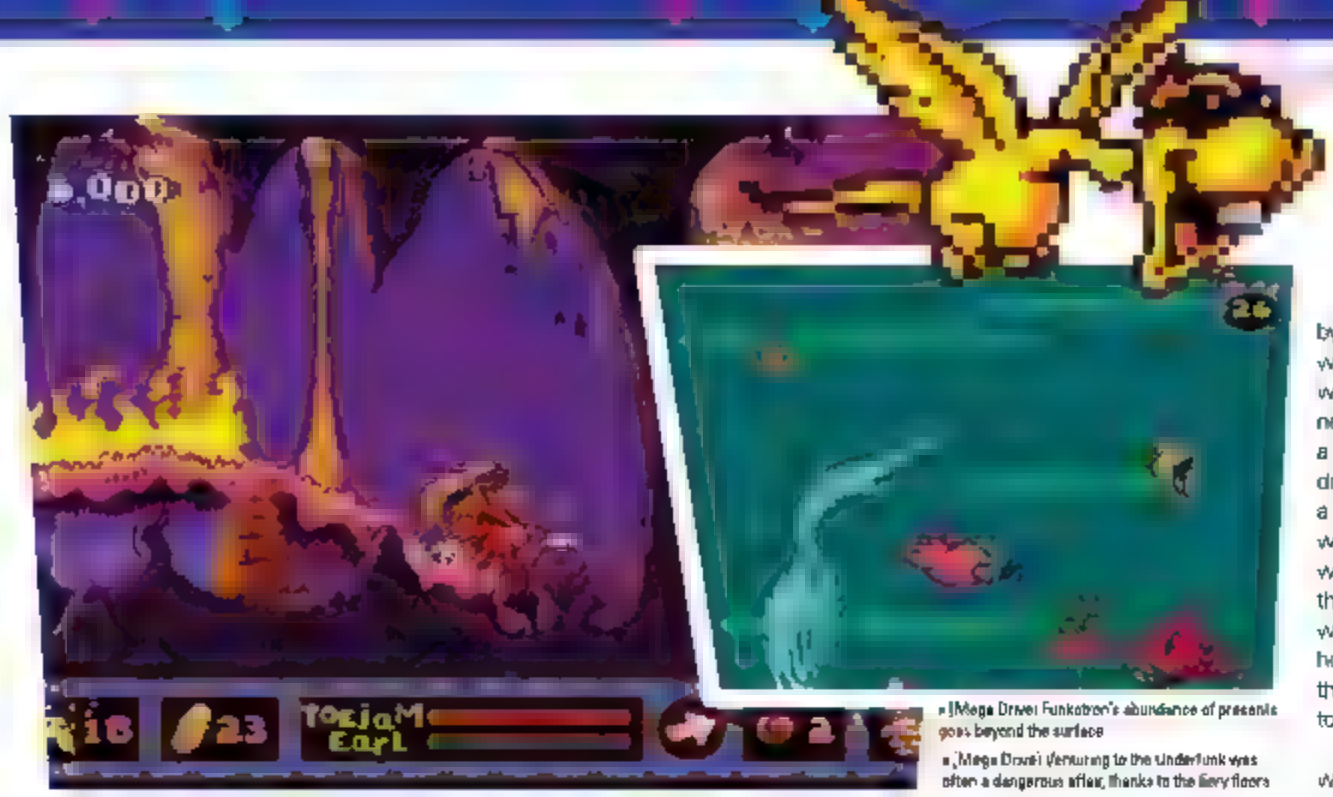


If any trend defines the 16-bit console market of the early Nineties, it is easily the saturation of mascot characters. Every company seemed to have cartoon creations to unleash upon an increasingly weary gaming public, and it took something a little special to stand out from the crowd. As a red three-legged alien and a large yellow alien united by their love of rap, *ToeJam & Earl*'s titular heroes definitely did just that. The offbeat nature of the characters gave them a unique appeal and didn't just extend to their designs – Greg Johnson, designer of the aliens from Funkotron, told us back in issue 71 that the unusual names were the result of programmer Mark Voorsanger mishearing the intended names FlowJam and Whirl.

The alien duo first reached our screens in a cooperative exploration game that took its inspiration from *Rogue*, which Greg had discovered while studying at university. ToeJam and Earl have crashed on Earth and need to find the ten scattered pieces of their spacecraft, while avoiding a range of hostile Earthlings. These enemies range from cart wielding shoppers and deranged dentists to militaristic chickens, and present a view of Earth's inhabitants that is equal parts satirical and bizarre. While the setting is roughly as far from high fantasy as it's possible to get, *ToeJam & Earl* shares certain common features with its inspiration, particularly in its use of randomised stages. Where it differed was in its approach to combat, which was dependent on finding items and generally best avoided, and its two-player mode.

When ToeJam and Earl drift too far apart to fit on a single screen, the game instantly transitions to a split-screen mode until they reunite. It's an elegant solution to allow players full freedom, but particularly technically demanding. "We weren't sure it was going to work at all. Sega told us it couldn't be done," remembers Greg. "But Mark Voorsanger is a pretty bright guy and very determined too. He pulled it off somehow. I'm surprised we haven't seen more of that in other games since then." The implementation was impressive – not only could players travel independently, they were even able to play on entirely different stages simultaneously. While players were free to explore in different directions, there were benefits to sticking together – they were able to high-five to transfer health and could even share lives if one player had run out.

While the game wasn't picked up on the basis of its strengths in character design, late in development Sega started to look at *ToeJam & Earl* with fresh eyes. "Sega never mentioned anything to us about our characters until the very end of the project when it looked for a brief time like *ToeJam & Earl* might become their mascots," Greg reveals. "That didn't last long, as we got bumped by *Sonic*." The team poked a little fun at this in the game's post ▶



» [Mega Drive] Funkotron's abundance of presents goes beyond the surface

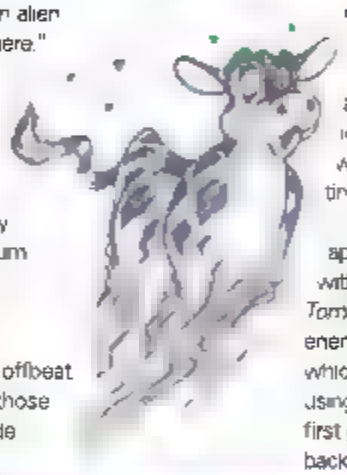
» [Mega Drive] Venturing to the Underfunk was often a dangerous affair, thanks to the fiery floors

"WE DID OUR BEST TO KEEP THE SPIRIT OF EXPLORATION AND DISCOVERY THAT WE HAD IN GAME ONE, BUT IT WAS A CHALLENGE"

Greg Johnson

credits sequence on Funkotron, where an alien can be seen saying "No hedgehogs 'round here."

ToeJam & Earl received a mixed response from the press. Its detractors were particularly vocal in criticising the game, particularly when it came to the slow pace of proceedings. *ACE*'s review went so far as to say "Boring really doesn't quite sum up the toe-curling tedium of the whole debacle." *ToeJam & Earl* also received a good number of positive reviews, particularly from publications in Europe. Praise focussed on the game's offbeat humour and excellent music, but even those publications that praised the game made



note of the its weirdness and potential to polarise audiences. "That's what happens whenever you release something quirky and new," concludes Greg. "Some people love it and some don't get it at all." Sales were initially slow and the game took a long time to build a following via word of mouth.

After the first game, an oddity in the series appeared on the six-game cartridge bundled with Sega's Menacer lightgun. *Ready, Aim, Tomatoes!* was a simplistic game featuring enemies from the original *ToeJam & Earl*, which needed to be pelted with tomatoes. Re-using a fair amount of visual material from the first game, it was a short but fun way to dip back into the *ToeJam & Earl* world.

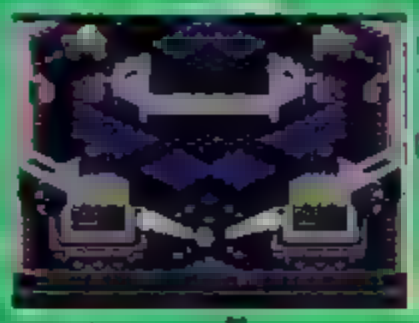
A full sequel was soon put into production by Greg and Mark in spite of the difficulties with the first game. *ToeJam & Earl*'s sequel was set to build on the original game with new terrain and indoor sections. But after only a few months of development, a change of direction was requested. "Sega asked us for a side-scroller with bigger characters so that's what we set about making," says Greg, who was unsurprised by the request. "All along the development of game one we knew that we were sort of off the beaten path. We hoped Sega's marketing would get it once the game was done, but we were still a bit too much outside the box."

In *ToeJam & Earl: Panic On Funkotron*, we join our heroes following a successful return to their home planet after the events of the first game. Unfortunately, something came back with them – Earthlings by the dozen, who were now running amok on Funkotron. ToeJam and Earl have to solve the Earthling problem, as well as luring out Lamont the Funkapotamus – the source of all funk in the universe – who has gone into hiding since the humans arrived.

The goal for the team was to make the game feel like a sequel, despite the drastic change of genre. "We did our best to keep the spirit of exploration and discovery that we had in game one, but it was a challenge," recalls Greg. This came primarily in the need to hunt for Earthlings, ranging from bratty ankle-kicking kids to downright bizarre enemies such as ghost cows and ducks on flying carpets. An arrow on the HUD directs players to their next targets, who might be causing havoc out in the open or hiding in trees and bushes. Once discovered, ToeJam and Earl need to

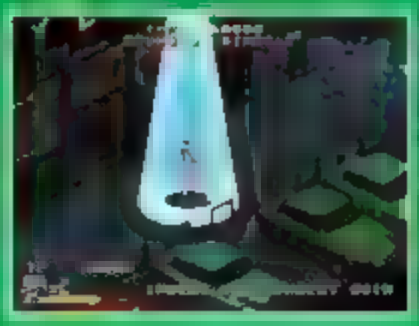
MELODY MAKERS

MICHAEL JACKSON'S MOONWALKER

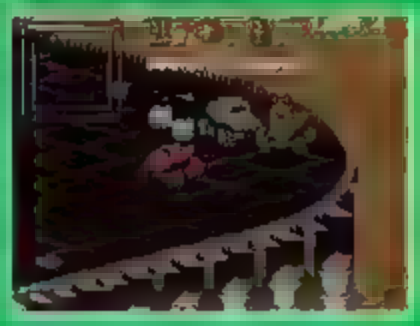


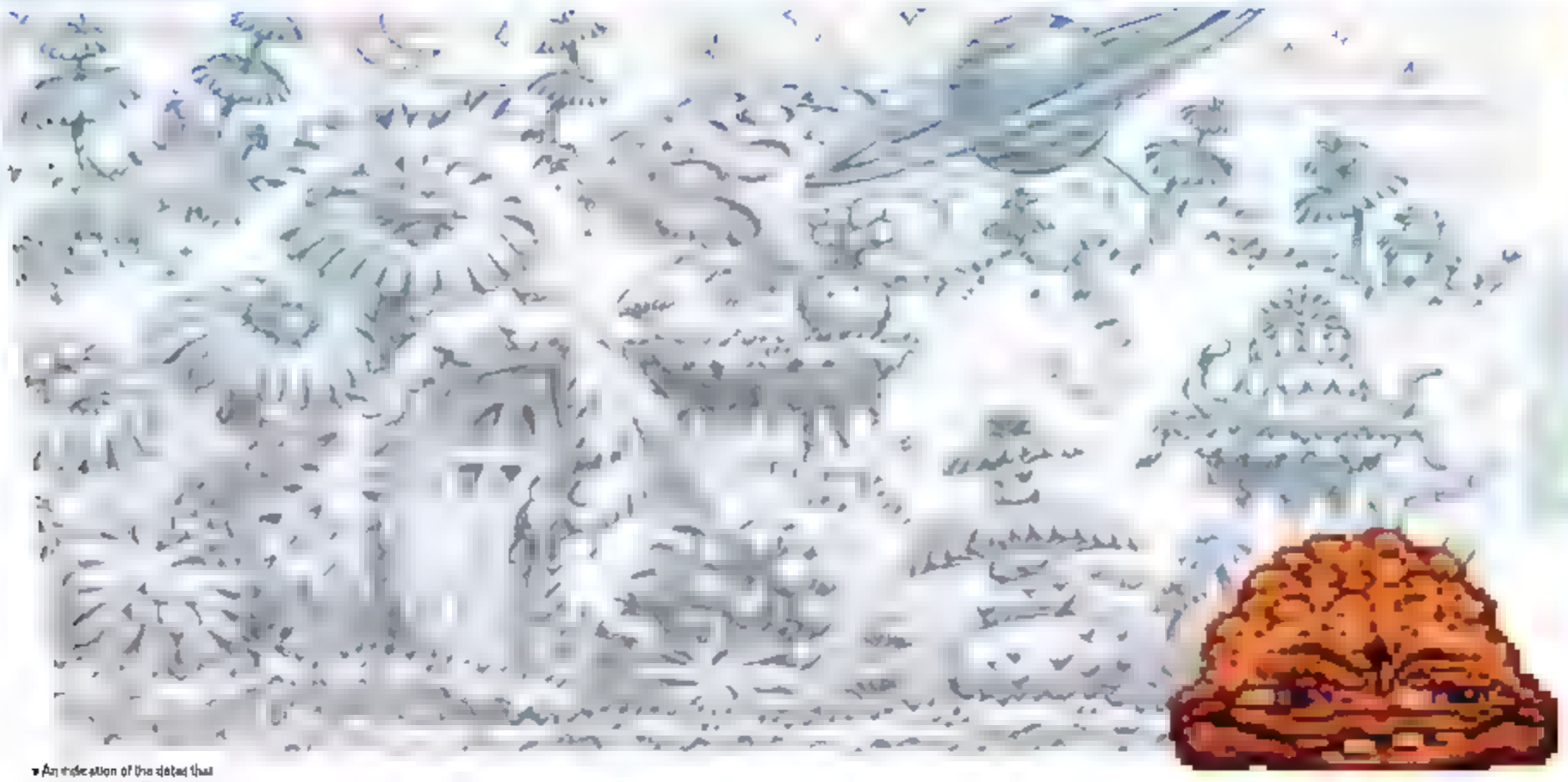
ROCK 'N ROLL RACING

ROCK STAR ATE MY HAMSTER



CRUE BALL





▼ An indication of the detail that went into creating *ToeJam & Earl's* world

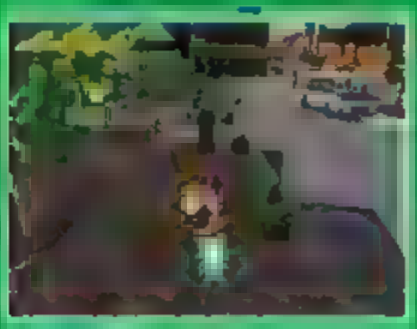
pelt Earthlings with jars to capture them for transport back to Earth

The trademark style of the first game was back in full force, with bright colours and excellent music, as well as amusing dialogue exchanges with the various inhabitants of Funkotron encountered throughout the game. The action took place across a variety of locations, from the streets of Funkotron to underwater stages and fiery caverns. The stages were designed by Greg and Evan Wells, who would later go on to design work for Crystal Dynamics before joining Naughty Dog, where he is now co-president. The two of them packed the game with content, including secret areas, bonus stages and even some mini-games. The most memorable of these was the beat-matching game with ToeJam and Earl's friends. Peabo, Sharla or Lewanda would provide a beat in the form of a button sequence the player had to match: a style of rhythm-action gameplay that would later be fully explored by the *PaRappa The Rapper* series.

Greg was proud of the team's achievements with the game. "The game was a lot of fun to make, and I know we were very happy with how it turned out. I think we squeezed a *ton* of gameplay and content into that one year. We were only three people for one year but we really kicked butt on that one." *Panic On Funkotron* was released during the height of the Mega Drive's popularity and its safe choice of genre meant that it wasn't nearly as polarising to critics as the original game. The game generally did well across the board, with scores of over 90 per cent from *Sega Pro*, *Mean Machines Sega* and *Mega*.

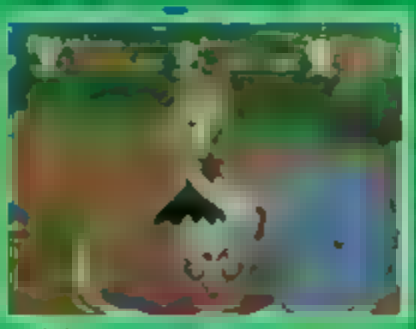
However, the game developed a negative reputation with fans of the original for straying too far from the formula of the first game, and in recent years the positive responses from contemporary critics have become somewhat forgotten. It's not hard to understand this point of view though, particularly considering that even Greg expresses regret over the change of genre. "If I had a time machine, I'd pop back and tell the old us to ignore all of the requests from Sega to change the second game and continue with things as we'd started – and build game two to be a true sequel to game one."

The ambition to make a true sequel would be revisited with *ToeJam & Earl III: Mission To Earth* (then codenamed ToeJam, Earl ▶



JET SET RADIO

ETERNAL SONATA



SOUND SHAPES

» Dreamcast Co-op is functional in the leaked Dreamcast prototype of *ToeJam & Earl III*.

» [Dreampast] The Dreamcast game's engine was admirable, showing large stages at a high frame rate.

RECURRING DREAMS

PROPELLER ARENA

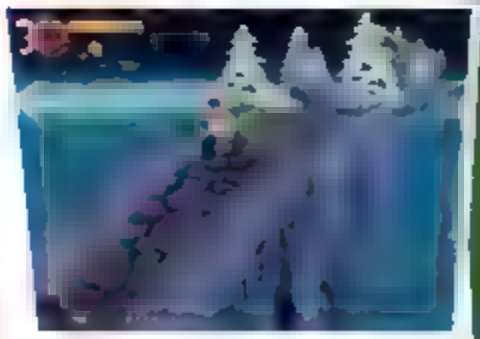
HALF-LIFE

HELLGATE

And Latisha. The project began life as a Dreamcast game in 2000, developed by T. &E. Productions and Sega's JS studio Visual Concepts. *ToeJam & Earl III* was set to return to the formula of the original Mega Drive game while including Latisha, a new female character with a feisty attitude, as well as new features such as online multiplayer. The game retained the cooperative exploration key to the series as well as *Panic On Funkotron*'s increased focus on combat, with the introduction of Funk Fu and Funkify attacks to ward off pesky Earthlings. This time our Funkotronian heroes were back on Earth, searching for the 12 Sacred Albums of Funk which had been stolen by the Earthlings, as well as looking to defeat the Anti-Funk.

Unfortunately, the years following *Panic On Funkotron* had not been kind to Sega. The Saturn had suffered in the marketplace and the Dreamcast had failed to turn the situation around. In fact, when the game made its public debut at E3 in May 2001, production of the console had already ceased and Sega was in transition to its new status as a third party. After a brief surge of excitement, the game quietly disappeared as a new platform was sought. The PlayStation 2 and GameCube were preferred choices, but ease of development and Microsoft's promises of marketing support ensured that by the time the game resurfaced, almost a year later in April 2002, it was bound for the recently launched Xbox.

In its new incarnation, *ToeJam & Earl III* retained many elements of the Dreamcast design and had received a visual upgrade to account for the new host hardware, but Greg informs us that the change cost the game one of the features that could have distinguished it from the crowd. "One of the things I was bummed about was we had to jettison the online multiplayer mode that we had been building for the Dreamcast. And it was pretty much done too on the DC, but we didn't have



» [Dreamcast] Many concepts intended for the aborted sequel to *ToeJam & Earl* showed up in *ToeJam & Earl III*, such as ice stages.

» [Dreamcast] New girl Latisha in her Dreamcast appearance, showing [illegible]

"WE HAD TO JETTISON THE ONLINE MULTIPLAYER MODE THAT WE HAD BEEN BUILDING FOR THE DREAMCAST"

Greg Johnson

time to get it working and debugged on the Xbox." The game did at least become one of the first to have downloadable content over Microsoft's new Xbox Live service.

While some changes were driven by time constraints, a whole range of unfortunate ones were requested by Sega, which had started to worry about the game's viability before release. "The original idea was to do a very faithful remake of game one," recalls Greg, "but Visual Concepts thought that was too old school." The changes that were requested drastically altered the structure of the game. "Six months before we released Sega asked us to change course and add in mini-games and gates, bosses, more locked collectibles and make it a hub structure instead of stacked levels," remembers Greg, "They said they wanted it more like *Donkey Kong 64*."

The result of the executive meddling was plain to see. Reviews for *ToeJam & Earl III* were generally less favourable than for either of the Mega Drive games, with much criticism directed at the repetitive nature of the new gameplay structure. Old fans were put off and newcomers weren't enticed, resulting in disappointing sales. Greg feels that the late changes were detrimental to the game's chances. "I think we lost a lot of support from our core audience who were once again confused by the change up. That was twice in a row, and it sort of killed the series. Sorry about that, *TJ&E* fans."

While Toejam & Earl Productions tried to keep the aliens active, there hasn't been an official release in the series since *ToeJam & Earl III*. Greg's pitch for a multiplayer Nintendo DS game failed to find any interest from publishers and was abandoned in 2007, while licensing issues have kept the duo out of Sega's recent crossover games such as *Sonic & Sega All-Stars Racing*. But the story doesn't end there. In September 2013, a forum member at Assembler Games purchased a Katana Dreamcast development unit and made a surprising announcement: the kit contained a playable build of *ToeJam & Earl III*. Greg was asked for permission to release the prototype, but was understandably unable to officially endorse it. "We told him that we couldn't really give him permission for the parts we don't own, but that as long as he didn't sell it we wouldn't sue or get in the way."

With no response from Sega, a community release of the disc image was made just a few months later, allowing Dreamcast players to get their hands on the game at long last.

This early version shows where the game was heading at that point in time, playing closely to Greg's original vision of a faithful remake. Some of the elements of the Xbox release such as Latisha and Funk-Fu attacks are present, as are the gospel singers, but the Dreamcast prototype features linear stage progression using elevators as in the original game, instead of a hub world. The prototype isn't close to complete – the game boots straight to a character select screen and starts to become unstable after stage nine – but there's still a good amount of gameplay available despite this.

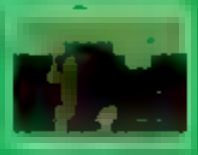
While he may not be able to approve the leaked prototype, after Toejam and Earl have spent a decade out of the limelight Greg's response is a positive one. "We're actually glad to have *Toejam & Earl* out there at all, and it's nice to see that there are still people who remember it and get excited about it."

STRANGE SIBLINGS

ToeJam & Earl isn't the only videogame to have had a drastically different sequel.

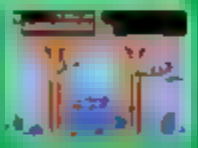
ZELDA II: THE ADVENTURE OF LINK

■ [redacted] ■ 1988



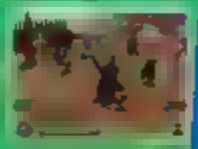
WONDER BOY III: MONSTER LAIR

■ Arcade ■ 1989



DYNASTY WARRIORS 2

■ PlayStation 2 ■ 2000



■ [Xbox] The Xbox version's visual overhaul included improved water effects and more buildings in stages.

THE Bluffer's guide TO

How the genre evolved

ARCADE

Whether they're in charge of cars, planes or even anti-gravity vehicles, the thrill of taking the chequered flag has drawn the attention of players for decades. Learn the history of this enduring genre and discover why it remains so appealing

With the popularity of real-world motorsports, it's no surprise that racing games have been consistently popular over their long history. Steve Lycett, a prominent name in arcade racing thanks to Sumo Digital's work on the *OutRun 2* home ports and the *Sonic & All-Stars Racing* series, explains the immediacy of the genre: "You don't need to set the scene, explain the story or the controls. Everyone immediately understands that the big wheel thing steers you, the gear lever changes gears to make you faster and you have to keep your foot on the pedal!"

Coin-op manufacturers were producing racing games prior to the introduction of videogames, with cabinets such as Sega's 1969 release *Grand Prix* utilising electromechanical designs to simulate racing. When the arcade boom began in the early Seventies, hardware limitations meant that the earliest games such as *Formula K* were played from a top-down perspective. While this has spawned a rich history of top-down racers such

RACERS

as *Super Sprint* and *Micro Machines*, the genre's major evolution came with the introduction of viewpoints that put the player on the road, allowing a greater sensation of speed.

The earliest racing videogame to provide a first-person perspective was Reiner Foerst's obscure coin-op *Nürburgring* in 1975, which used a frighteningly complex hardware design comprising 28 circuit boards. This pioneering release was seen in a Dusseldorf bowling alley by Ted Michon of Digital Games, who happened to be in Germany fixing problems with the company's *Air Combat* cabinets. Ted was convinced that the *Nürburgring* design wasn't commercially viable to mass produce and set to work on replicating the concept with a simpler hardware setup. The resulting game was *Night Driver*, which had the benefit of Atari's marketing muscle and was able to popularise the use of first-person perspective in games.

The genre's conventions were further established in the early Eighties by one of the genre's most prolific developers

Bluffer's guide

ARCADE RACERS: THE TERMINOLOGY

DRIFT
■ A useful racing technique in which drivers cause the rear wheels to lose traction, allowing cars to slide around corners at high speed

SLIPSTREAM
■ Slipstreaming is the act of following another car, allowing you to gain speed by taking advantage of lower air resistance. It's very useful.

BOOST
■ A way to increase top speed and acceleration in your vehicle. It's usually implemented as a limited-use special feature or a power-up, so use wisely

RUBBER-BANDING
■ Rubber-banding slows down leading racers and speeds up those lagging behind to keep races nice and close.

ROLLING START
■ A type of race start where all cars begin in motion, rather than being stationary on a starting grid. Sega's *Daytona USA* is a classic example.

CHECKPOINT
■ In many games, a constantly decreasing timer is your biggest enemy. Checkpoints keep you alive with a handy time extension

AUTOMATIC & MANUAL
■ Gear-changing systems. Automatic is easier, while Manual is often faster and key to mastering advanced driving techniques.

TUNING
■ The act of modifying a car for increased performance. It's started to become a common feature in recent coin-op racers that offer the use of card saves

» [Arcade] Sega's *Daytona USA* is still great fun and a highlight of many arcades.

was the first game to utilise the common third-person view from behind the player's car and allowed races through a variety of locations, as well as including snow conditions and transitions from day to night. *Turbo* would receive conversions for the ColecoVision and Intellivision and inspired imitators of its own, but was quickly eclipsed by the genre's biggest hit to date from Sega's rivals at Namco.

Released in 1982, *Pole Position* was inspired by Formula 1 and introduced many recognisable elements of the sport to videogames for the first time, from the qualifying lap to trackside advertisements. Namco even used Fuji Speedway, a former Formula 1 circuit, as the in-game course. Providing this level of realism had a huge impact on players, including Steve. "I just remember the cabinet being huge. I'm pretty sure I was terrible at it, but it didn't matter as I could have just sat there mesmerised by the attract sequence pretending to drive." *Pole Position* became a genuine phenomenon, selling over 20,000 cabinets and even having its name licensed for a Saturday morning cartoon series. A sequel quickly followed in 1983, improving the visuals and adding three new courses including Suzuka.

While the genre was advancing quickly in the arcades, home players weren't being left out and the same arcade design sensibilities were being employed in home releases. Activision's 1983 release *Enduro* was a technically impressive Atari 2600 game employing many of the elements introduced in *Turbo* such as weather conditions. In the same year, the ZX Spectrum received *3D Deathchase*, a motorbike game that introduced combat elements to the racing genre, tasking the player with chasing down and shooting two other motorcyclists in a forest. Trees became increasingly numerous in later levels, dramatically increasing tension. Other combat-based racers would go on to include *Chase HQ*, *Roadblasters* and the likes of *Twisted Metal* and *Carmageddon*, amongst others.

The 16-bit era ushered in a number of new developments in the racing genre, led by a

SELECTED TIMELINE

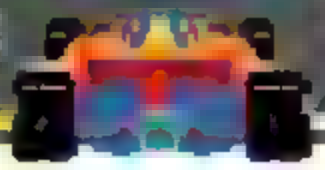
NIGHT DRIVER
■ Inspired by Reiner Foerst's *Nürburgring*, Atari's release popularised the first-person perspective in the racing genre and gaming as a whole.

TURBO
■ By including weather effects, transitions from day to night and the classic third-person perspective, Sega's racer established genre conventions.

3D DEATHCHASE
■ Spectrum owners were treated to this classic, one of the earliest racing games to feature weapons.

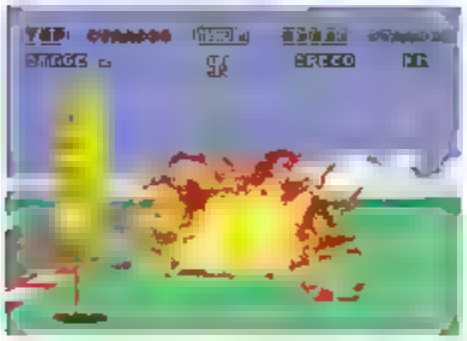
1976 — 1977 — 1978 — 1979 — 1980 — 1981 — 1982 — 1983 — 1984

SPEED FREAK
■ Vectorlogic's *Speed Freak* was the first racing game to use vector graphics, providing the first attempt at 3D in the genre.



POLE POSITION
■ Namco's smash hit was the first racing game to simulate a real circuit and the first to include a qualifying lap.

▶ [Arcade] When accidents happen, arcade racers often go completely overboard with the pyrotechnics

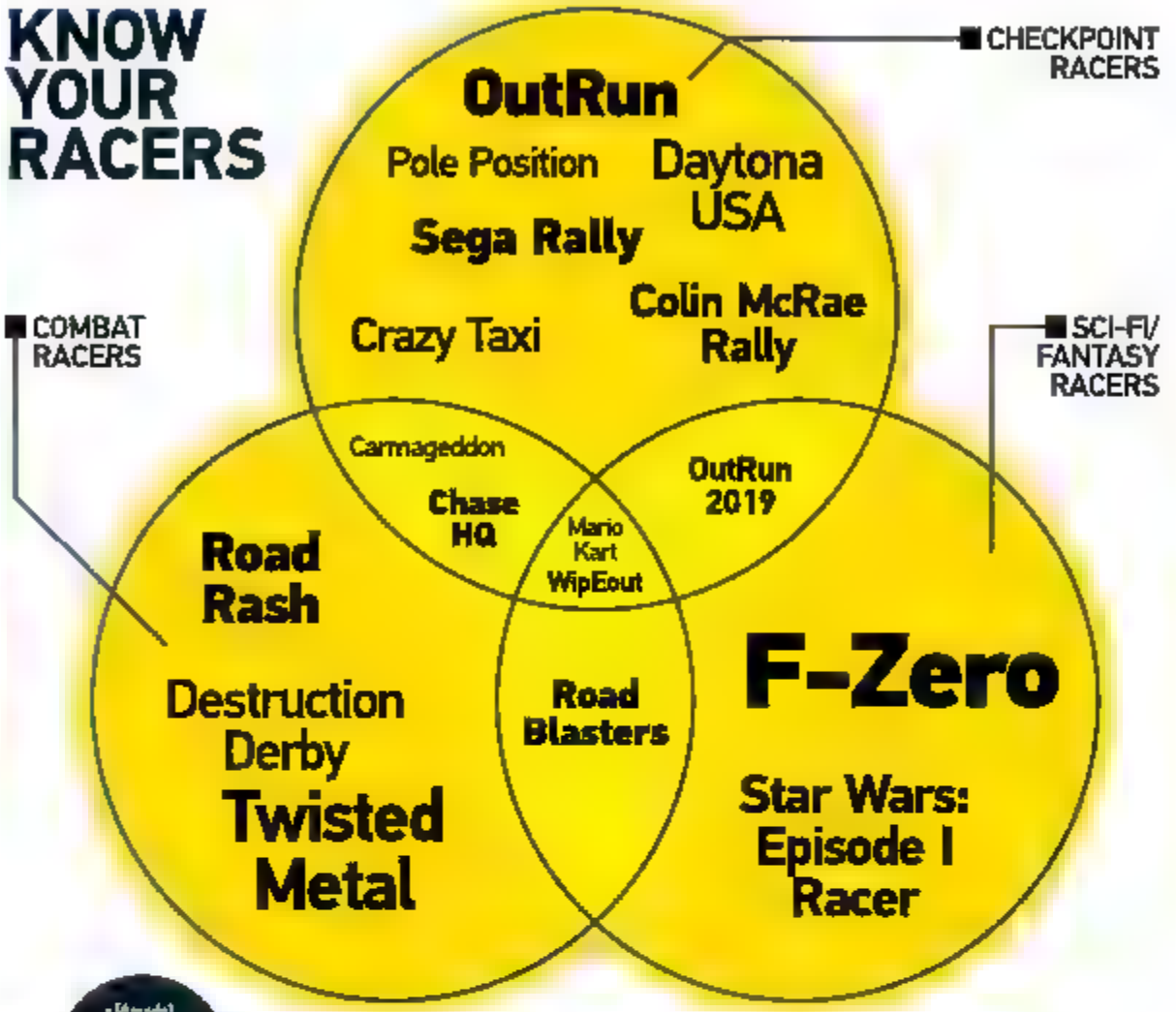


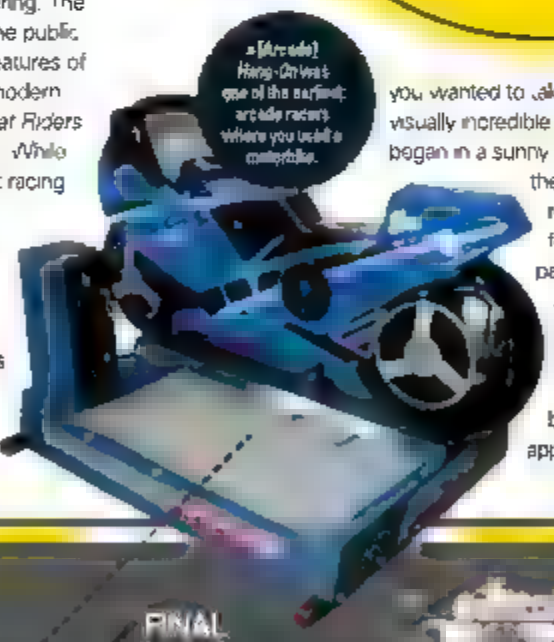
pair of arcade games from Sega's Yu Suzuki. The motorbike racer *Hang-On* was available in a variety of cabinets, but the most innovative was a full motorbike which not only seated the player, but acted as the controller. Doing away with sticks and buttons, the cabinet instead gave players a throttle to twist and required the bike to be tilted for steering. The concept caught the imagination of the public and remains one of the distinctive features of arcade racing cabinets, living on in modern releases such as Namco's *Dead Heat Riders* and Raw Thrills's *Super Bikes* series. While *Hang-On* was popular, Suzuki's next racing game was even more impressive.

OutRun served as a lesson in how to create the perfect setting for an arcade racing game. Steve has fond memories of the game. "Even before we worked on it, I was always a huge fan of *OutRun*. It was so iconic: choose your favourite tune, get on the road and pick the route you wanted to take. It helped that it was also visually incredible for the time too." The game began in a sunny beach setting and allowed the player to choose their own route through 15 stages at forks in the road, rushing past windmills one minute and speeding through deserts the next. Players could even select one of three tunes on a radio, music which proved to be a huge part of the game's appeal and returned in sequels.

Another hardware innovation during the period was the introduction of linked arcade cabinets. Namco's *Final Lap* was the first game to include the feature, allowing for up to four cabinets to be linked for eight-player races. This was swiftly adopted by many manufacturers, with gigantic multiplayer racing setups becoming the centrepiece of many a seaside arcade in the late Eighties and throughout the Nineties. Recognising the role that these games played as attraction pieces in arcades, manufacturers would later include extra monitors to allow spectators to view ▶

KNOW YOUR RACERS





▶ [Arcade] *Hang-On* was one of the earliest arcade racers where you rode a motorbike.

FIVE ESSENTIAL GAMES

If you need a crash course in arcade racing, these games demand a test drive

NIGHT DRIVER

■ 1976 ■ ARCADE

While it wasn't the first videogame of its kind, *Night Driver* represents one of the very earliest attempts to provide players with a driving game that captured the feel of driving a real vehicle. Atari popularised the use of a first-person perspective in videogames and moved the genre on from the top-down perspective.

POLE POSITION

■ 1982 ■ ARCADE

Namco solidified key conventions of the arcade racing genre with *Pole Position*, which featured the most advanced visuals of its time and an unrivalled sense of speed. It was the first game to heavily draw on real-world influences, featuring Japan's former F1 circuit Fuji Speedway and even examples of trackside advertising.

SUPER MARIO KART

■ 1992 ■ SNES

Super Mario Kart's focus on combat racing cemented it as a multiplayer favourite and defined the entire karting subgenre in the process. Sonic, Crash Bandicoot and even *Castlevania*'s Dracula have taken to the track since, but few rivals have been able to keep up with Nintendo's most enduring spin-off series.

DAYTONA USA

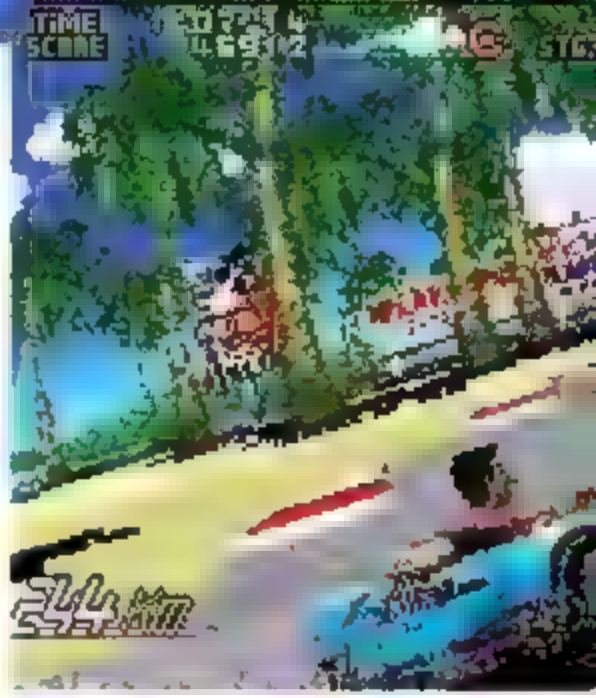
■ 1993 ■ ARCADE

Sega has developed a number of exceptional arcade racers over the years, but *Daytona USA* is arguably the most iconic of them all. It was rare to visit an arcade without a linked set of *Daytona* cabinets in the Nineties, while the game's enduring popularity led to a 2010 arcade re-release as *Sega Racing Classic*.

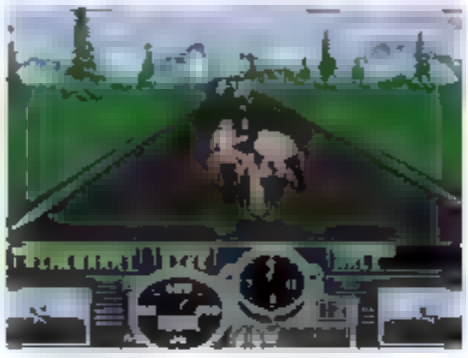
BURNOUT PARADISE

■ 2008 ■ PS3/XBOX 360/PC

Criterion's fifth *Burnout* game retained the intense speed and spectacular crashes that made its predecessors famous, but took the genre in a bold new direction by adding an open-world structure. Reworking genre conventions expertly, Paradise represents an exciting future for racing.



■ [Arcade] Sprite-based games became increasingly complex, with *Power Drift* rotating sprites according to your view.

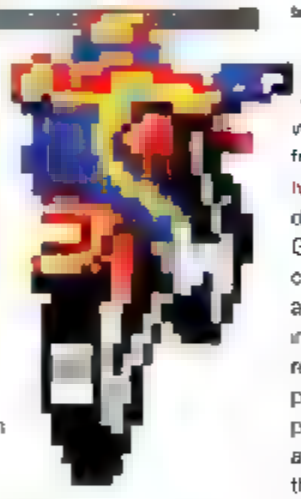


■ [Mega Drive] *Road Rash* included close-range combat, featuring bikers attacking each other with chains and clubs.

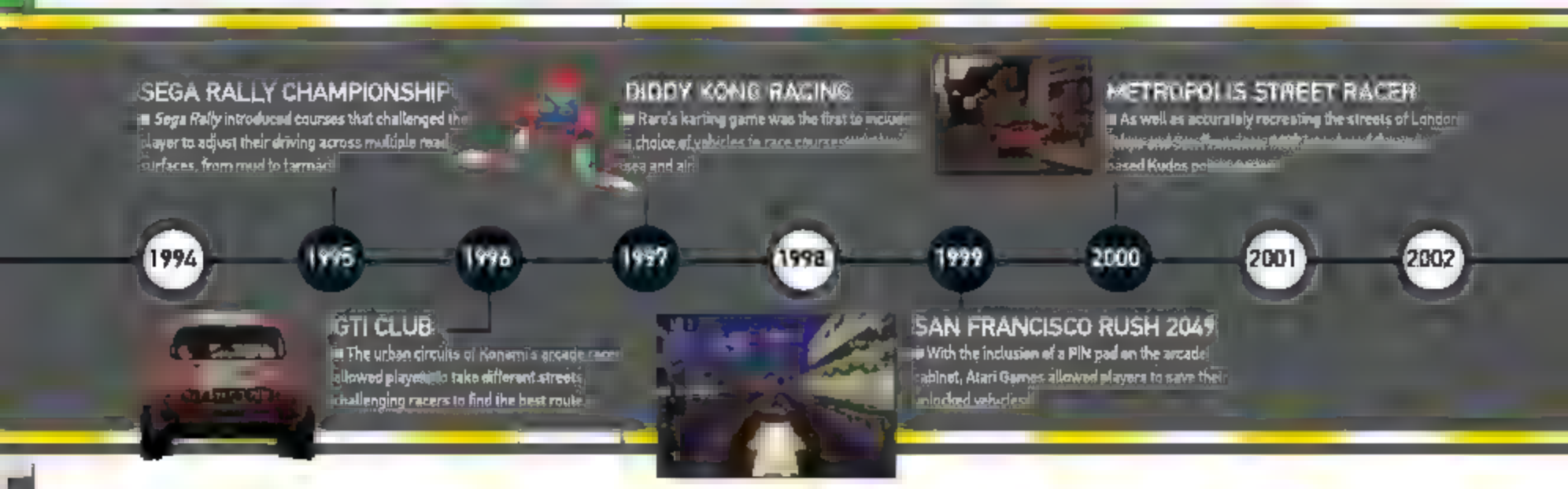
▶ the action. The earliest 3D polygonal racing games began to show up in the late Eighties, with *Hard Drivin'* from Atari and Namco's *Winning Run* both arriving in 1988. These games had sparse scenery when compared to sprite-based racers, but they had an easier time representing common course features such as hills and tunnels. In the case of *Hard Drivin'*, the stunt course featured an outlandish full loop and jumps. Home console games were inspired by this approach, such as Geoff Crammond's *Stunt Car Racer* on the Amiga and Atari ST in 1989. These games provided an early hint of the direction that arcade racers would take in the Nineties.

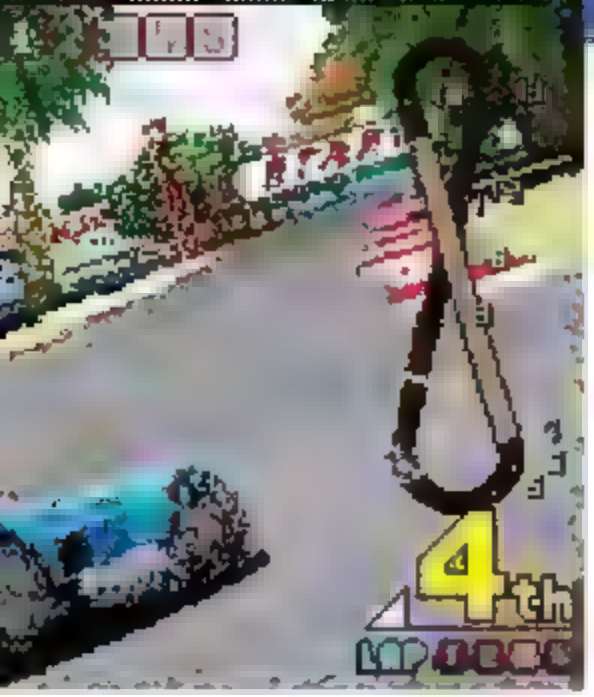
As the 16-bit era gave way to 32-bit arcade machines, developers regularly experimented with new settings for their games and alternatives to traditional vehicles such as cars and motorbikes began to appear. Futuristic hovering vehicles were featured in Atari's *S.T.U.N. Runner* and Nintendo's *F-Zero*. Another Nintendo release, *Super Mario Kart*, put the company's mascot in a go-kart to race against friends and enemies from the series. Including iconic weaponry from homing red Koopa shells to boost mushrooms, the game had such a focus on combat that a multiplayer battle mode was included. *Super Mario Kart* became so popular that a range of imitators followed, establishing karting as a subgenre.

It's fair to say that the 32-bit era started slowly, with games like Sega's *Rad Mobile* taking a similar approach to earlier releases such as *Power Drift*, simulating depth and elevation with scaling sprites. Extra power was largely used to add to the mood, with excellent weather effects and a Sonic the Hedgehog air freshener dangling from the rear-view mirror (which, bizarrely, was the mascot's videogame debut). However, Sega's partnership with General Electric Aerospace provided the company with the Model 1 arcade board, an advanced 3D platform with which it could truly impress. The board made its debut with the release of *Virtua Racing*, the most detailed polygonal racer to date. *Virtua Racing* allowed players to select from four different viewpoints at the touch of a button. "Being able to change the camera to one you liked was exciting at the time, you could literally get right inside the car or pull right back out to see where people were. We take it for granted now, but it was incredible you had this sudden freedom to pick how you viewed the race," remembers Steve



> **"You had this freedom to pick how you viewed the race"**
>
> Steve Lycett

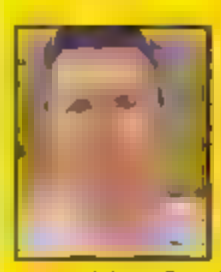




1993 was an important year for 3D racing games as intense competition between Namco and Sega provided players with two classic games which changed the dynamics of the genre. While the rivalry coincided with graphical advances, Steve points out that the changes were not merely superficial. "When everything went 3D, it opened to the door to start making the handling models more advanced. For the first time you saw proper drifting in both *Ridge Racer* and *Daytona USA*, that was something you couldn't easily convey with sprite scaling and again, it offered advanced players something to get really good at."

Namco's *Ridge Racer* was the first racing game to display texture-mapped polygons, which made it look markedly more realistic than the 3D games before it and conveyed a sense of location that Steve admires. "I'm a huge sucker for *Ridge Racer*. I've been lucky enough to go to Japan and you can literally see the inspiration for all those overpasses and fantastic skylines in Tokyo." The game included drift mechanics for the first time, allowing players to take incredible lines around tight corners. Sega's *Daytona USA* followed soon after and also boasted texture-mapped polygons and expertly designed courses, as well as some memorable vocals from Takenobu Mitsuyoshi – but crucially included a multiplayer function which set it apart from its rival. Namco responded with *Ridge Racer 2*, a multiplayer version of the original, beginning a rivalry that Steve describes as "like a mini arms race with shiny cars."

WE SPEAK TO... Alex Ward, Criterion Games



What was the first arcade racing game you played?
It was most likely the original Atari *Pole Position* cockpit cabinet. I still like that game. The steering wheel was usually busted which meant that you had to use some sort of super skill to drive.

What are the key elements of an arcade racing game in your opinion?
Bright colours, outrageous roads and incredible drifts. You can have all the 900 degree home steering wheels you like, but absolutely nothing would put a smile on my face like playing games like *OutRun* or *PowerDrift*.

One of *Burnout*'s central mechanics involves taking high risk actions in order to build up your boost. What was the inspiration behind this idea?
The original inspirations for *Burnout* were the film *Ronin* and the French short film *Rendezvous*. Both showed everyday cars being ragged and driven hard on the city streets of Paris. The boost mechanic came out of a meeting Fiona Sperry and myself had at EA Canada in early 2000. They liked the game and came close to buying it. A very smart guy called Hanno Lemke questioned us on why players would drive head-first into traffic. He challenged us to make it rewarding for the player. From that meeting, we came away thinking 'the more dangerously drive the faster can go'.

Criterion has recently worked on the *Need For Speed* series. How do you approach new entries in a series with a strong lineage?
We'd finished *Paradise* when *Need For Speed Undercover* came out. I was reading *Edge* magazine and it scored 3/10. I emailed Frank Gibeau at EA and wrote something like 'three out of ten is a disgrace. You should give that to us. We'd love to do real cars and we'd love a crack at it.' I wasn't expecting a response, but ten minutes later he called and said, 'OK, it's yours'.

Originally I wanted do a very social online-only car game but people didn't believe in it and early prototypes were poor. We decided to cut our losses and really give the company an obvious winner – which was *Hot Pursuit*. So we went back to the roots – high speed and cops.

The trend for polygonal racers pushed the popular 16-bit consoles of the time to their limits. Both the SNES and Mega Drive required additional cartridge-based processors to cope with their most impressive polygonal racers, *Stunt Race FX* and *Virtua Racing*. When the next generation began in earnest with the 1994 releases of the PlayStation and Saturn, conversions of *Ridge Racer* and *Daytona USA* arrived respectively, which played a key role in shaping public perception of the machines. *Ridge Racer*'s PlayStation release was an astonishingly close conversion, while *Daytona USA*'s low frame rate, pop-up and letterboxing did nothing to dissuade Saturn doubters.

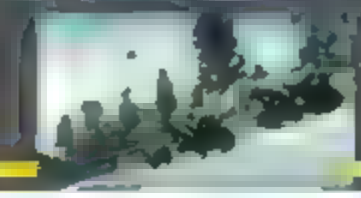
Though arcade ports would still prove popular for the duration of the generation, the ability of the new consoles to provide ▶

■ [Arcade] Many legendary developers have worked on racing games over the years. *Crusin' USA* was designed by Eugene Jarvis.

SPLIT/SECOND: VELOCITY
■ Black Rock Studio's racer allowed players [illegible] disasters mid-race to [illegible]

SONIC & ALL-STARS RACING TRANSFORMED
■ With courses that could be demolished and flooded, Sumo Digital created a kart racer in which every lap [illegible]

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012



BURNOUT PARADISE
■ *Burnout Paradise* applied an open-world structure to arcade racing for the first time, giving players unprecedented freedom [illegible]

BLUR
■ Bizarre Creations attempted to revive arcade competitiveness in the home by allowing [illegible]

Bluffer's guide

WHAT MAKES A GREAT ARCADE RACING GAME?

Discover the elements that make up all essential arcade racers

COMPETITION

■ Stealing first on the final straight or blasting a friend off the track satisfies the need for spirited competition better than most other genres.

CRASHES

■ When everything has gone horribly wrong, a great arcade racer will let you know with dramatic flips and massive explosions

SPEED

■ The essential component, the main thrill of any arcade racing game comes from the sensation of travelling at ludicrous speeds

LOCATIONS

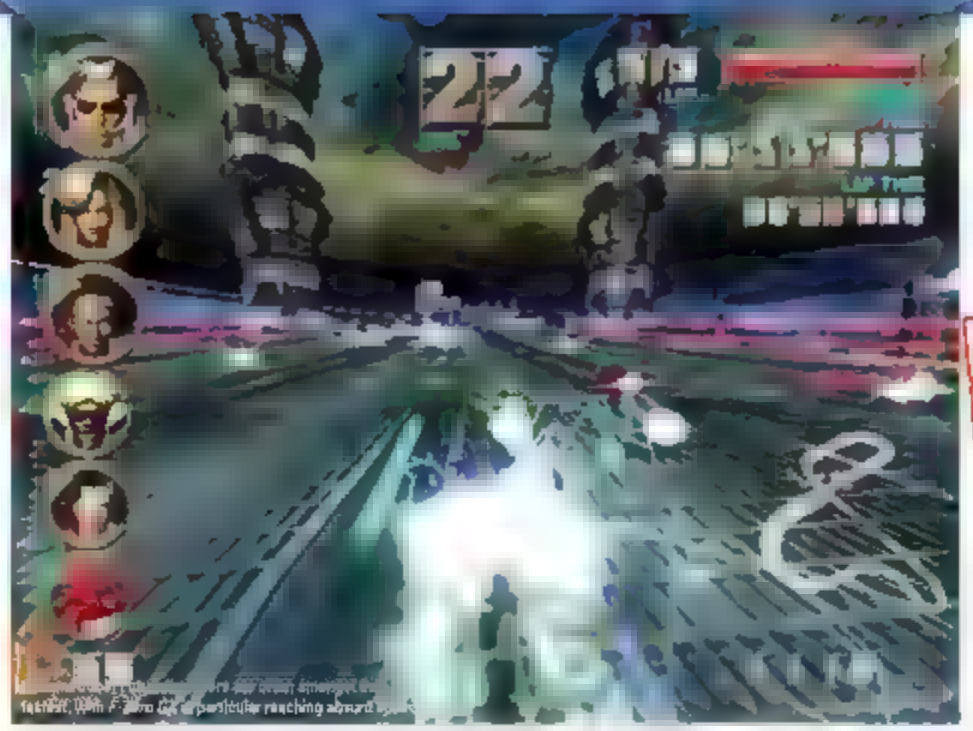
■ From sunny beaches to colourful space highways, arcade racers offer some of the most beautiful scenes available in videogames

HANDLING

■ Easy for beginners to handle while including sufficient depth for experts, the best arcade racers achieve a tricky balancing act.

VEHICLES

■ Cool vehicles provide important wish fulfilment for the player be they gleaming sports cars or futuristic anti-gravity racers.



"3D opened the door to make the handling models more advanced"

Steve Lycett

similar visual experiences to arcade cabinets ushered in new era of prominence for console racing games. Psygnosis's anti-gravity racing game *WipEout* was one of the defining titles of the PlayStation launch, combining weaponry and sophisticated handling with licensed music and a gritty industrial aesthetic designed to appeal to older players. Nintendo employed 3D in the 1996 N64 release *Wave Race 64* to provide a believable sensation of racing on water, something which had been difficult to achieve with sprites. Also on the N64, Rare utilised the space afforded by 3D to add planes to *Diddy Kong Racing*, one of the earliest games to innovate in the kart racing subgenre.

Despite being a genre with a long history, arcade racing has continued to evolve into the new millennium. Sega's *Crazy Taxi* replaced fixed courses and checkpoints with a huge city filled with customers that desperately needed Kentucky Fried Chicken, but eschewed on-track competition in favour of high score competition. The incredibly ambitious Dreamcast game *Metropolis Street Racer* had a unique approach to track design, with the developers accurately recreating sections of London, Tokyo and San Francisco and designing circuits from the streets. It also introduced a skill-based points system, which rewarded stylish driving while penalising careless racers.

In the arcade, depth has been added to games such as Sega's *Initial D* and Namco's *Wangan Midnight* with the use of save cards. Cards are dispensed from the cabinets themselves and allow players to save story progress and tuning options, with the goal being to build the best car to take on other players in head-to-head races. Other games such as Raw Thrills' *H2Overdrive* and Namco's *Dead Heat* allow players to input a PIN which saves progress to the machine being used. The last decade has seen a number of popular coin-op series revisited, with 2003's sublime *OutRun 2* acting as a standard bearer for high quality revivals. Retaining the forking roads and iconic tunes of the original, the game introduced highly satisfying drifting to the series. The *OutRun 2SP* upgrade added a whole new set of 15 stages, and received excellent home ports as *OutRun 2006: Coast 2 Coast* and *OutRun Online Arcade*.

One of the leading lights of the genre in recent times has been the *Burnout* series. First arriving in 2001 on the PlayStation 2, the original game introduced its signature boost mechanic that encouraged players to take risks by driving into oncoming traffic, getting dangerously close to opponents and, of course, drifting. If the player messed up while building boost, the result was a spectacular crash, complete with damage to the car. Crashing was brought to the fore for *Burnout 3: Takedown*, which focussed on combat without giving the player weapons. Takedowns could be achieved by ramming the opponent into a wall, nudging them into traffic or even landing on them from a jump. *Burnout Paradise* provides the most impressive contribution to the genre in a very long time by implementing an open-world structure in a genre that has historically been confined to closed circuits.

The racing environment has seen exploration as a design space, too. Early Wii title *Excite Truck* included power-ups which altered the landscape, allowing players to create huge jumps or launch opponents into the air. Black Rock Studio's *Split/Second: Velocity* gave us a new approach to combat, allowing players control over scripted environmental disasters to wreck opposing racers and open up new routes. *Sonic & All-Stars Racing Transformed* also features mid-race track changes, with a particularly memorable Skies of Arcadia circuit seeing players take to the air as the roads are destroyed by the background battle.

While arcade racing games remain popular at home, they are one of the dominant genres for new arcade releases. Steve knows this well. Sumo Digital's *Sonic & Sega All-Stars Racing* made the rare leap from console to arcade in 2011. When asked to explain the continued appeal, he finds it easy to explain. "We've come full circle, but it's still a thrill to sit down in a full-scale arcade cabinet, force feedback wheel in-hand, surround sound blaring out and a huge screen projecting the track blazing past you. Who doesn't like to go fast?"

DID YOU KNOW?

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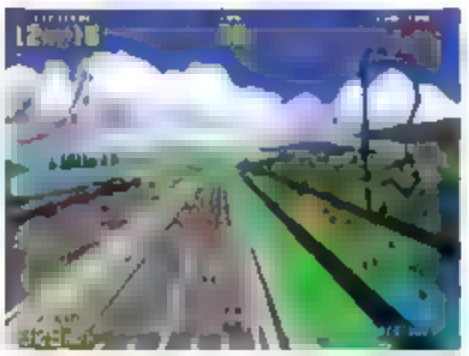
7

» [Playstation 2] Street racing games featuring heavily-tuned cars became popular following the release of *Need For Speed: Underground*.



» [Arcade] *Virtua Racing* was the first game to include a selection of camera angles, including this bird's-eye view.

» [Dreamcast] Waterfalls provide opportunities for huge jumps in Midway's speedboat racer *Hydro Thunder*.

Special thanks to Alex Hood at Fun Central arcade in Bournemouth for her help with this article

Future Classic

Modern games you'll still be playing in years to come

INFO

- Featured System: PS3
- Year: 2010
- Publisher: [illegible] Games
- Developer: Rockstar San Diego
- Key People: [illegible] Houser (writer), Daren Bader (art director), Rob Wiethoff (voice of John Marston)

GO DEEPER

- Rockstar's next game, *L.A. Noire*, featured John Marston's but inside a bit in the city
- The original *Red Dead Revolver* was initially going to be published by Capcom and Rockstar picked it up

• PS3, like *GTA*, Rockstar's characters in *Red Dead* are fast talkers, with sharply scripted back-and-forths

RED DEAD REDEMPTION

Rockstar Games managed to craft the greatest of open worlds, as well a mature and accomplished narrative that reignited the unfashionable Western genre

THE BACKGROUND

The most publicly notable part of *Red Dead Redemption*'s journey to completion is the fact it was announced in a largely different form alongside the PS3's messy unveiling during E3 2005. It was informally referred to as a sequel to 2004's *Red Dead Revolver*, some aspects of which made it into the far more ambitious sequel, notably the Dead Eye slow-motion combat mechanic.

The goal was to capture the essence of Westerns on a pure wish fulfilment level, creating an open world backdrop that could enable every archetypal experience that a fan of that genre could ask for. Part pastiche and part expansion of Rockstar's existing sensibilities with creating open worlds – the latter skill honed by the preceding title *GTA IV* – the New York Times claimed that *Red Dead Redemption* cost almost $100 million to make, an investment that vastly outstripped most of Rockstar's industry contemporaries at the time.

It was a gigantic risk, really, considering that the Western had more or less remained dormant within videogames (and the wider cultural landscape) for many years – the original *Red Dead Revolver* only sold 3 million copies. No small number, of course, but a follow-up of *Red Dead*'s scale had to do a lot better to justify that size of investment. It did. With 13 million copies sold, *Red Dead* asserted Rockstar's dominance of the open world genre beyond *GTA*.

THE GAME

A great open world has an effect on the player beyond spectacle and size. To consume hours of your time while you explore with no goal, enjoying the sunsets, creating gameplay moments of your own across snowy mountains and wildlife-populated deserts, *Red Dead Redemption*'s sandbox was simply years ahead of its competitors. While Rockstar's output is contentious among some as to whether the publisher's games deserve such extraordinary levels

Things of note

Open season

Beyond the single-player, *Red Dead*'s multiplayer built upon the *GTA IV* template of opening up the entire map, dotting forts and other areas of interest to give structure to the chaos.

Man of war, man of peace

Red Dead was sold as the pursuit of a criminal. Yet, the theme is ultimately of a man unable to escape his past mistakes, as John Marston's outlaw life haunts him to the end.

Mexico and José González

Red Dead's most talked about moment comes when Marston enters Mexico, and the astonishing transition to this other land with an original track by José González

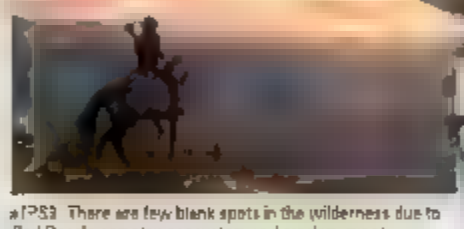
Horror comes West

Of the all the people who own *Red Dead*, we wonder how many sampled the generous DLC *Undead Nightmare*, which adds a whole horror-themed (and amazing) campaign for a mere £7

Voicing John Marston

Rob Wiethoff put in a landmark performance as John Marston that showed how far ahead of its time Rockstar is with its storytelling. His wry put-downs were very well written also.

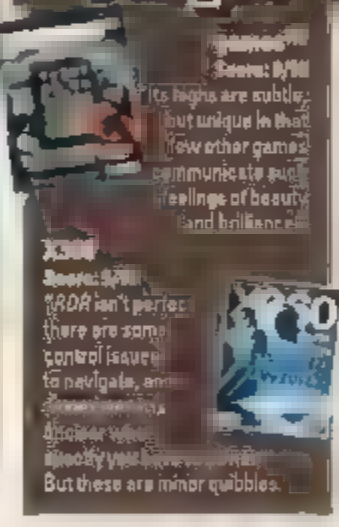
▲ PS3 By the third act of the game you've unlocked West Elizabeth, which adds a small city, lake and mountain range to the ludicrously-sized map



▲ PS3 There are few blank spots in the wilderness due to *Red Dead*'s complex ecosystem and random events

▲ PS3, *Red Dead*'s well-acted and brilliantly written cast brought John Marston's story a genuine energy

What the press thought



of praise. Its ambition with *Red Dead* to create an open world that permits every kind of Wild West fantasy goes far beyond what even its own *GTA* series had previously accomplished.

Here, we have a gigantic world with its own ecosystem, random events and RPG-infused depth to unravel. John Marston's story is technically set on the American/Mexican border yet it compresses elements of the wider American wilderness into one massive summary of its most visually diverse areas. Travelling across the world, your knowledge of each region is formed by recognising landmarks and rock formations – no stretch of land feels wasted. It's the interactivity with this impressively constructed locale that makes *Red Dead* so compelling, however, and ahead of its time within a genre that is still mostly restrained in the way you can affect the surrounding world.

Being able to hunt anything, board every train, start a shootout in saloons, duel with strangers, anger wild creatures and lasso any NPC gives you constant impetus to remain in this world, to play with the possibilities outside of the story missions. This is balanced by a smart morality system that declares you an outlaw or champion based on your actions – consequences, to bring weight to the chaos.

The environment feels handcrafted, rather than big for the sake of it. Let's say you're out in the middle of a desert and you've narrowly survived an encounter with wolves, just as the golden sun sets behind a wounded John Marston with his horse in the distance, you own that moment. That set of circumstances and bizarre sequence of events may never happen again, yet *Red Dead Redemption* is astonishing in that it'll throw many more as dramatic in your direction – and they will all belong to you, too.

Yet the factor that underlines the success of those moments comes in the portrayal of John Marston himself as a sad-eyed, sympathetic and tragic figure being manipulated into erasing his past mistakes by a force of questionable morality. Rockstar's scriptwriting is industry-best, and it's the multidimensional depiction of Marston, as well as those who he encounters, that offers a whole other layer of investment for the player that a typical narrative-driven game couldn't hope to replicate.

Why it's a Future Classic

Red Dead Redemption represents a high point in sandbox-based game design, storytelling and contemporising the Western for today's audience. Inspired by *Unforgiven*, *Tombstone* and many other cinematic sources, it's the high point of Rockstar's ongoing efforts to deconstruct America's cultural identity as well as a videogame built on so many sophisticated systems that it always offers a compelling reason to come back.

Rockstar is about to release *Grand Theft Auto V* which will exceed the size and detail of *Red Dead*'s world considerably. Yet it's the amazing effort to create a convincing period piece that will always set *Red Dead* apart from the company's equally compelling sister series – this isn't simply *GTA* with a Western theme slapped on. It's part homage to a cornerstone of popular culture, part reinvention of a genre that Rockstar itself pioneered, and a distinctive work that'll remain influential for years to come.

Future Classic

Modern games you'll still be playing in years to come

» [GameCube] Wildly spraying bullets at these overgrown grasshoppers is not at all recommended

INFO

» **Featured System:** GameCube
» **Publisher:** Capcom
» **Developer:** In-House
» **Key People:** Shinji Mikami, Director; Hiroyuki Kobayashi, Producer

GO DEEPER

» Hideki Kamiya's classic *Devil May Cry* series was conceived as a concept for *Resident Evil* 4

» Three dimensional versions have panned a narrative before Shinji Mikami took over the show

RESIDENT EVIL 4

Despite its action focus, we find out what made Resi 4 an enduring horror masterpiece...

» [GameCube] "Watch out for the — too late. Hey, did you notice that — que- not War- for me."

THE BACKGROUND

It was to be the final *Resident Evil*. Five years in gestation, evolving through multiple forms, it was in danger of losing semblance to the trilogy that went before. Even today there are fans of the series that feel *Resident Evil 4* was too much of a departure (while still bemoaning the awkward controls of the originals). Yet, with hindsight, *Resident Evil 4* is regarded as not only the best of the bunch, but also one of the greatest videogames ever, claiming an X-Attache Case full of awards.

At the time of its GameCube release in 2005, Capcom's survival-horror saga was facing challengers from all sides. Konami's spooky *Silent Hill* had reached its fourth installment with the hallucinatory *The Room*, there had been two *Fatal Frame* outings from Tecmo with a third on the way. Hideki Kamiya's trailblazing 'Stylish Hard Action' *Devil May Cry* had been cutting everybody's work out since 2001.

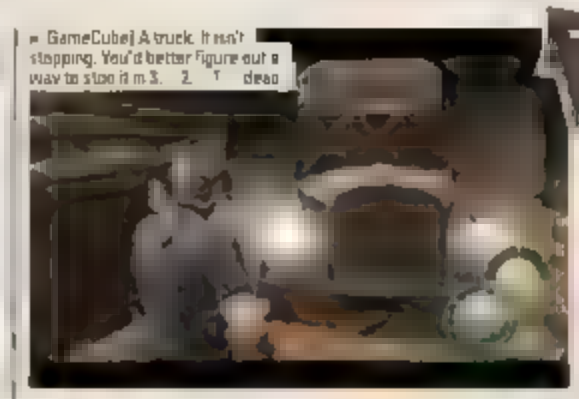
News of Shinji Mikami being back at the helm, combined with a five-year absence, reminded gamers how hungry we all were for a comeback. And with Japanese horror becoming fashionable through movies such as *Dark Water* and *One Missed Call*, the stage was well and truly set.

THE GAME

Peering over the shoulder of Leon S. Kennedy, jogging down a countryside track, we are thematically, geographically and mentally very far removed from Raccoon City. Exposed in the open, in broad daylight no less, this doesn't feel like *Resident Evil* at all... not yet. However, there is something eerily compelling about the found-footage Eighties video-nasty vibe to proceedings that, okay, this is already scary.

We remember thinking, upon our first playthrough of *RE4* almost a decade ago, "I wish this guy would just get out of the way..." A pseudo first-person approach, with its tactical aim bolted on, was a giant leap out of the magnetic boots experience of *Resident Evil* 1-3. Yet during the 18 hours or so it takes to reach the end of Leon's presidential mission, deliberate and measured action is something that you learn to appreciate. Sure, it seems odd that Special Agent Kennedy is unable to run

» [GameCube] You barely escaped, lighting one of these, now there's around six or so. Good luck.



» [GameCube] A truck. It isn't stopping. You'd better figure out a way to stop it in 3... 2... 1... dead.

and gun, dive and shoot. For *Resident Evil*, though, it works. You can keep your Wii controls.

Initially the striking thing about *Resident Evil 4* was how we were seeing *Resident Evil: Remake* quality environments in real time, and added to that so much freedom available to make tactical choices in these environments. Dealing with this kind of overshadowed the Los Iluminados narrative for a while – at least until the point that the Ganados (infected Spanish villagers) started sprouting tentacles from their necks.

Capcom's design and animation is exemplary throughout this trek that takes in six chapters across three main acts. Equally admirable is the difficulty progression, something of a lost art, which keeps players in sight of hope no matter how many times the "You Died" message is smeared across the screen.

Managing the contents of Leon's attaché case, deciding between precise distance or close-quarters rapid-fire arms, becomes an obsession all by itself. Considering which weapon serves best versus specific enemy archetypes becomes self-rewarding in time for our first incredulous encounter with El Gigante (mountain of a mutant man). Briefly, on the subject of El Gigante, quick-time events are brilliantly integrated. They especially make chapter 4-1's Verdugo boss battle a heart-in-mouth experience, but in every case they're unobtrusive, logical and keep us on our toes.

Returning to *Resident Evil 4* after such a long sojourn, it's surprising how entertaining it still is even after dallying with *Gears Of War* or *The Last Of Us*. We're kept guessing as to who the ultimate evil is among Bitores, Salazar, Krauser or Lord Saddler. Their respective minions are among the most imaginative ever to grace a monster hunt.

In the tradition of saving the best part until last, boss battles – in particular Salazar – are simply out of this world. Whether trying to land the world's biggest fish, dazing a distorted skeletal priest, aiming for the heart of a dwarf amid writhing tentacles or dashing between collapsing platforms buying time to flee a Plagas-powered fiend, these are frankly astonishing scenes that have rarely been matched nor bettered.

WHY IT'S A FUTURE CLASSIC

In showing its age, rather than being a negative, *Resident Evil 4* presents one of its greatest assets, that it proved so influential. It raised the bar in production values, wrote the book on 'How to QTE' (though it didn't invent the mechanic), and gave Epic Games half its blueprint for *Gears Of War* – the other half being Namco's cover-based shooter *Kill Switch*.

The visuals, maxed out at 480p, are more than a match for most games released a decade down the line. Indeed, the fuzziness combined with the subdued colour palette, add to the distinction. Here is a colossal adventure for starters, around 20 hours average, but it's just as enjoyable to revisit after settling upon a preferred set of tools and tactics. A masterclass from Shinji Mikami. ✱

Things of note

BAD-ASS BOSS BATTLES

Typically just as you're running out of ammo and critically low on health, along comes a monster the size of the screen to bite your head off.

QTE FTW IMO

Contextual actions that require split-second response times allow *Resident Evil 4* to build on the drama without overcomplicating the basic control scheme.

THE QUALITY GRAPHICS

Grainy visual effects contribute to the atmosphere and hide the shortcomings of second-generation 3D modeling on consoles.

MAN AT ARMS

Weapon variety is not just for show. Each gun or grenade has a tactical benefit, suiting many styles of play. The way that enemies recoil under fire is pleasing.

ARE YOU COMING

They're not always the smartest tools in the box, but when the enemy is working as a team to halt Leon's progress you can count on their unrelenting ruthlessness.

» [GameCube] Rushing down weakened enemies to start hacking away with a combat knife... bliss.

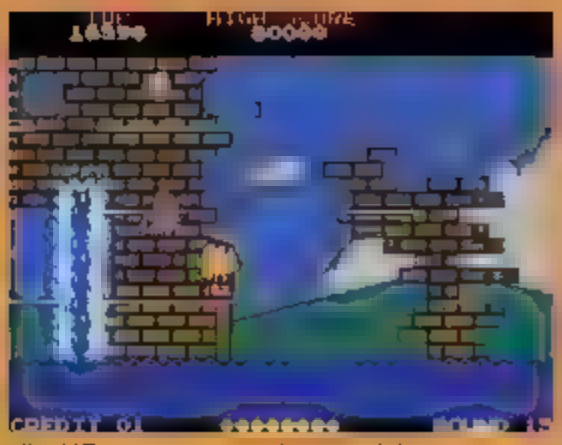
» [GameCube] Choose the rifle and you can snipe at the guy waiting for Leon at the end of this line.

» [GameCube] Leon S Kennedy to the rescue ma'am. Just follow me and do everything that I say.

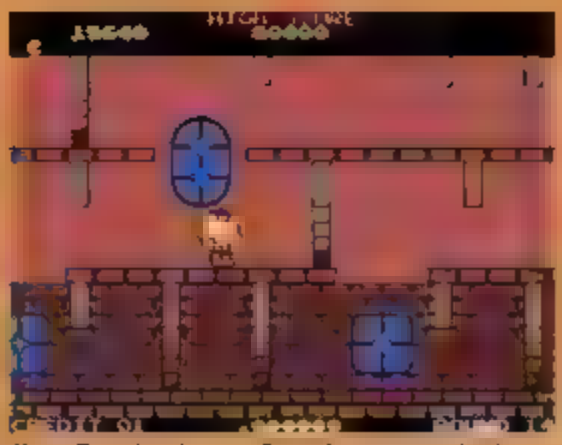
THE ULTIMATE GUIDE TO

PAC-LAND

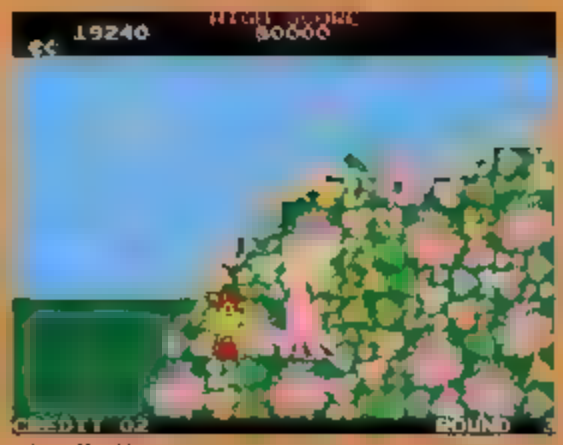
Namco's jaunt through Pac-Land remains one of the most unusual of the iconic videogame character's arcade outings. We discover why this Pac-Man sequel had legs. And a hat...



▸ [Arcade] These water spouts can knock you into the drink.



▸ [Arcade] The castle sections require Pac to collect keys to unlock the exit.



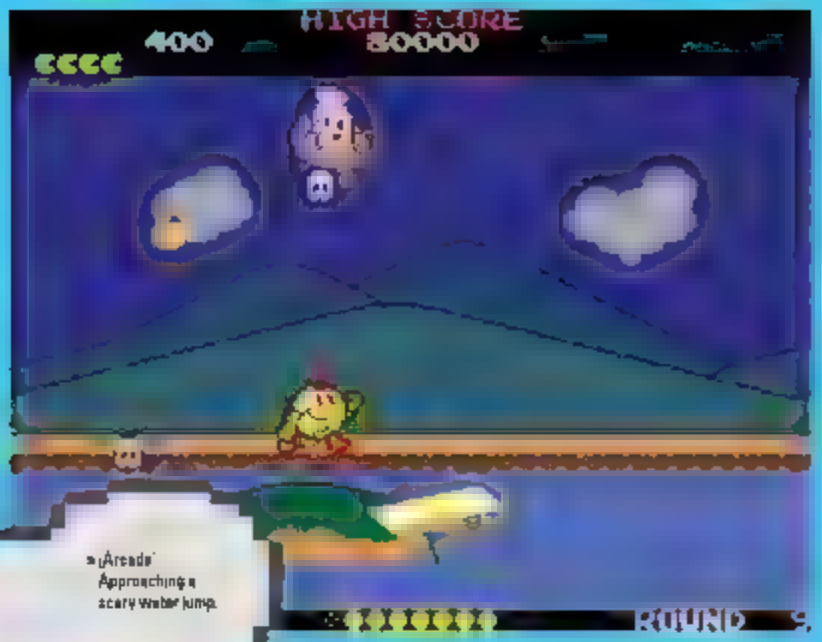
▸ [Arcade] Pac-Man looks extra pleased as he receives his magic boots.

■ Arcade! One of the things that pleases us most is the way Pac's hat flies up and down when he jumps.

As we sit down to tackle *Pac-Land* for the first time since it caught our eye nearly three decades ago in the arcade, one thing that strikes us is how much it resembles an interactive version of the Saturday morning cartoons of our youth. From that insanely catchy jingle (taken from the Hanna Barbera animated series that inspired the game) to the lovingly rendered sprites and colourful scrolling backgrounds, it's a slice of Eighties coin-op eye-candy. In fact, it's probably the first case we can think of an arcade game based on a cartoon based on an arcade game, if you get our drift. And as we journey deeper into Pac-Man's cheerful homeland, the other thing that occurs to us is that there's a familiar feeling about all this that we've definitely experienced somewhere else, with a couple of Italian plumbers rather than an anthropomorphic yellow blob and a bunch of coloured ghosts. But more on that later.

The original arcade game was in some ways a bit of an oddity: a sequel that completely switched genres from the abstract maze games that came before it to a scrolling action-adventure, in a cabinet that didn't even feature a joystick controller. Instead players were presented with a couple of buttons to run left or right and another to jump, simplifying things even further than the four-way control scheme of the original. And that's it... in *Pac-Land*, our power-pellet popping hero's main task is simply to run from left to right, really fast. And after he's dropped off a friendly fairy cannily hidden under his hat, turn around and run the other way to reach a welcome intermission with Ms (now Mrs?) Pac-Man, or Pac-Man and a couple of Pac-pets.

A good analogy for the game would be a sort of cross between *Hunchback* and *Track & Field*, with Pac dodging various hazards including a whole town full of ghosts who have taken to driving cars and piloting aeroplanes, and jumping obstacles ▶



▶ Arcade Approaching a scary water jump.

▶ Arcade! A leisurely open-top bus journey, *Pac-Land* style

▶ Arcade. Ghosts on pogo sticks in a forest. Yesterday.

like fire hydrants, cacti, quicksand and humungous water jumps. The last feature is where the *Track & Field* influence comes in, as you double-tap the run button to get a good burst of speed, hit a springboard to make the leap and continue to frantically button-bash to remain airborne. And it's a lot of fun, if a tad frustrating when you fail and end up in the drink. Daley Thompson never had to put up with this sort of thing.

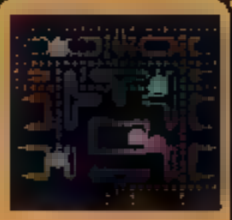
It's all very simplistic of course, but that's part of *Pac-Land*'s charm. Namco's three-button mini-adventure is a master-class in designing an easy-to-learn but deceptively challenging coin-grabber. It lures you into a false sense of security with its kid-friendly environments and jaunty melodies, then clobbers you with a tight time-limit, tricky jumps and even a few devious puzzles. And then there's the ghosts, one of which, Sue, chases you through the entire game, killing you outright if you hang around. Others drop baby phantoms out of windows and aircraft, or pilot flying saucers in awkward circular patterns above you. Luckily, this being a *Pac-Man* game they have the weakness of being chomped once you grab a power-pellet. But it's your only reprieve in a game that's constantly stacking the odds against you, especially on later 'trips' (the game's terminology for levels) where double-tapping that run button and putting your little Pac-legs to the metal is your only hope of reaching the fairy kingdom intact. There isn't even a continue option – lose all your lives and it's back to the title screen, although you can select later levels at the start.

One of *Pac-Land*'s joys is how breezy it feels in every playthrough. Each 'trip' is split into several bite-sized rounds punctuated by reaching a church (the Pac-folk would seem to be a religious lot) and a 'Break Time' sign, which usually takes only a minute or so to reach. A running Pac can leap a lot higher, meaning maintaining your speed and timing your jumps without slowing down is key. And making it unscathed through a round at full tilt, noshing bonus fruit and hurdling ghosts and fire hydrants like a professional Pac-athlete is tremendously satisfying. Probably the most enjoyable bit comes after reaching the Fairy Queen's flower-border when she grants you a pair of magic boots. These let Pac jump in mid-air, meaning lots of fruity bonuses as you sail above those pesky water traps and ghosties on the way back to your Pac-family. Watch out, though, as some return trips deliberately give you just enough time to reach a power-pellet to fend off a pursuing Sue. Sneaky old Namco.

We also rather like Pac's newfound obsession with hats, which links us nicely into talking about the fun little secrets in the game. Early on, jumping on and pushing fire hydrants in the correct order awards you with a protective helmet, which is handy for preventing death by falling baby ghosts, awarding you bonus points in the process. There are level

A SHORT HISTORY OF PAC-MAN

A selection of Pac-Man's best and worst moments



PAC-MAN

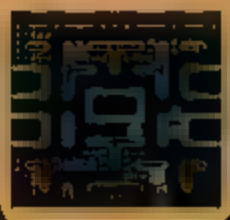
Toru Iwatani's seminal arcade mascot famously came to him after seeing a pizza with a slice cut out of its side. The game that started the franchise introduced us to the delights of dot-guzzling, fruit snacking, power-pellets and the pesky ghosts, each with a different behaviour pattern and personality.

MS PAC-MAN

Regarded as an improvement over the original, *Ms Pac-Man* began as a clone called *Crazy Otto*, before Namco picked up the rights from General Computer Corporation and Midway. The game featured more intelligent ghosts, moving fruit and the first appearance of Sue.

SUPER PAC-MAN

Namco's first true sequel was a disappointing affair that messed with the honed gameplay of the prequels, removing the dots and cluttering up the playfield with superfluous items. These included keys that had to be eaten to open doors and power-pellets that tripled his size and gave him an extra burst of speed.

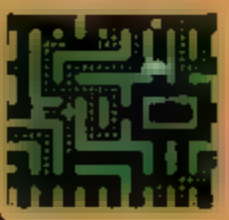


PAC-MAN PLUS

This was a second attempt by Bally-Midway to cash-in after *Ms Pac-Man* became its best-selling coin-op. Apart from being faster, giving the monsters funny hats and sticking in cans of Coke for Pac to drink, like *Super Pac-Man*, it was nowhere near as popular as its feminine prequel.

PAC & PAL

One of the weirdest of Namco's sequels, this is a *Pac-Man* game without dot-eating or power-pills, with Pac collecting playing cards and keys to access collectables. Throughout the game he also had to compete with his so-called pal, a bug-eyed green blob who constantly tried to make off with his fruity loot.



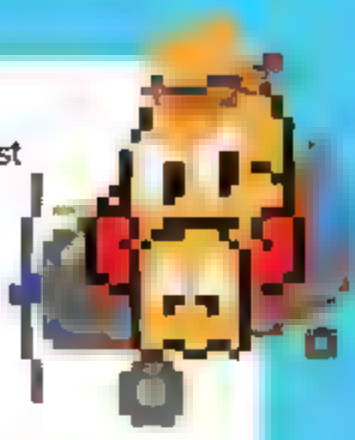
JR PAC-MAN

Another unofficial sequel from Midway, and starring a Pac-relative in a propeller beanie. *Jr Pac-Man* had mazes that were so big that the screen had to scroll as you moved around. The lack of escape tunnels and inability to see the ghosts at all times made it a very difficult game.

PIXEL PERFECT

The wonderfully colourful characters of Pac-Land

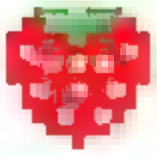
UFO Ghost


Plane Ghost

Pac-Man

Sue

Cherries


Strawberry

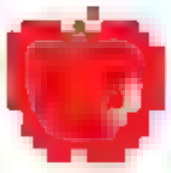
Window Ghost

Chomp-Chomp

Cactus

Sourpuss

Fire Hydrant


Apple

Peach

Fleeing Ghosts

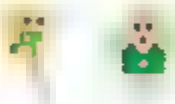
Ghost Car

Pogo Ghost

Power Pellet

Baby Ghost

Jr Pac-Man


Fairies

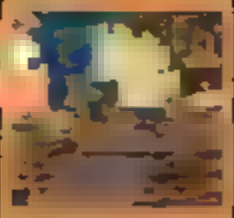
Ms Pac-Man

PACMANIA

Arriving three years after *Pac-Land*, this was a graphically reinvigorated return to the original concept, with isometric playfields and pleasing 3D renditions of Pac and Co. Pac-Man was now given the ability to jump over ghosts, but as with *Jr Pac-Man*, the scrolling made it much harder to avoid being caught.

PAC-MAN 2: THE NEW ADVENTURES

In this console adventure, rather than controlling Pac directly, players used a slingshot armed with pellets to interact with him. Hilariously, he also had a number of AI-controlled emotions, including grumpiness if you pestered him.



PAC-MAN WORLD

This console release saw Pac-Man gobbling his way through a 3D platform quest to rescue his family from his ghostly adversaries. Though derivative of earlier games like *Sonic* and *Mario 64*, it had plenty for Pac-fans to enjoy, and was successful enough to spawn two sequels.

PAC-MAN VS

This GameCube release was notable for the involvement of Shigeru Miyamoto, a long-time *Pac-Man* fan. Taking advantage of the GameCube to GBA link cable, it granted three players control of the ghosts against a player controlling Pac-Man with the GBA.

PAC-MAN CHAMPIONSHIP EDITION

This sequel saw the return of Toru Iwatani, and was his final game before retirement. It's the best classic-style *Pac-Man* game for years, with a time-attack structure and nifty new features like expanding mazes, ghost-chain bonuses, 'bombs' and an awesome Pac 'bullet-time' feature.

PAC-MAN BATTLE ROYALE

Battle Royale allows up to four players to take control of different Pac-Men. Played over a series of rounds, collisions send you bouncing across the screen, while power-pellets double your size, allowing you to munch on your opponents as well as the ghosts.

PAC-LAND CONVERSIONS

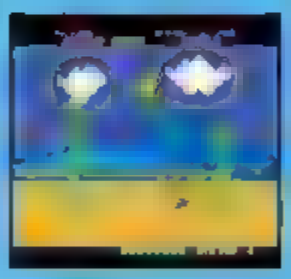
Unsurprisingly, Pac-Land turned up in an impressive number of ports

SHARP X68000

On Sharp's Japanese super-computer, *Pac-Land* looks and plays like a dream, with proper joystick control for Pac. We actually prefer this to the coin-op, as the water jumps seem a lot less fiddly to get across now, making for a more enjoyable game.

AMIGA

You'd think that the Amiga port would be superior to the C64 version, eh? Surprisingly, while the C64 had lovely smooth scrolling and near-perfect controls, here everything's way too fiddlery to be much fun. A real wasted opportunity.



PC ENGINE/TG-16

Although far superior to the Famicom outing, the TurboGrafx-16 version shares the Famicom's daft control scheme, but thankfully there's an option to change it to 'lever control' which is much better. Almost as good as the X68000 port.

FAMICOM

Pac-Land never made it to the Westernised NES console, remaining a Japan-only release on the Famicom. It plays fine, but suffers from bland looks and awkward controls that used the buttons to run left and right and the D-pad to jump.

SPECTRUM

The coin-op's colourful vistas were always going to problematic for the Speccy, and as with the Amstrad version, it ended up being a flick-screen adventure. It's more like *Dizzy* than *Pac-Land*, and unless you have 128K there's no music either.

"I think I got the easy gig as the C64 hardware was so straightforward to program"

Alan Ogg

warps and bonus lives hidden in tree stumps and cacti to discover and even the ability to turn invisible and invincible to Inky, Pinky, Clyde and his gang. Extra fruit and collectables can also be summoned by jumping on certain items and areas, and even the Flagship from *Galaxian* turns up as a bonus item. There's certainly plenty of scope here for players interested in upping and perfecting their high scores, as with the earlier *Pac-Man* games. And there's a nice amount of variety in the stages, from towns, forests and deserts to castles where Pac needs to pick up keys to progress through locked doors – later on these are played in complete darkness with a torchlight effect around Pac. Luckily these castle areas are always skipped in the return trips.

The home computer and console conversions of *Pac-Land* are a bit of a mixed bag, with the frantic button-bashing of the coin-op translated to desperate joystick-waggling over those water jumps. In the UK, publisher Quicksilva was lucky enough to grab the rights from Namco, leading to the C64, Spectrum, MSX and Amstrad CPC ports, converted by Scottish developer Gannon Designs. Despite a few tweaks, like the inability to jump on the heads of the ghosts, the C64 version was a standout. The game was never as popular as the original *Pac-Man*, but *Pac-Land*'s legacy is more important than you might think. In our interview with *Pac-Man* creator Toru Iwatani back in issue 61 of RG, he told us that he felt the game – which he was also involved with – pioneered horizontally scrolling arcade games, something perhaps evident in later titles like *Ghosts 'N' Goblins*, *Alex Kidd* and *Wonder Boy*. And according to Iwatani, *Pac-Land*'s biggest accolade of all was that it influenced Shigeru Miyamoto to create *Super Mario Bros*. Not a bad pedigree for a game based on a Saturday morning kids cartoon...

PLAYSTATION

Pac-Land appears on the *Namco Museum Volume 4* compilation with cult shooters *Ordyne* and *Assault* among others, making it a good investment for arcade aficionados. Be sure to change the Famicom-style control system.

ATARI ST

We get the feeling that the shoddy Amiga port was converted from this version, both being coded by conversion outfit Mr Micro rather than Gannon Designs. It also features the same ropey character animations..

AMSTRAD CPC

A bit of a missed opportunity, as the CPC port looks as nice as the C64 version and sports equally good music. But it lacks the Commodore's scrolling, being cut down to a series of single screens, and is noticeably sluggish to play.

■ (C64) Alan Ogg got no help from Namco to create his conversion

ALAN OGG

Behind the scenes of the great C64 port

How did Gannon Designs end up working on the *Pac-Land* conversions?
Negotiations for doing *Pac-Land* were concluded before I joined Gannon Designs so the kudos for landing the contract would be down to Martin [Gannon]. I got started on a version of *The Hunt For Red October* but that fell through before we really got into it and I got pulled in to help Martin finish off *The Tube* so we could get started on *Pac-Land*. I only worked on coding the C64 version, although we all cooperated on the playability aspects across all the platforms. To be honest, I think I got the easy gig as the C64 hardware was so much more straightforward to program than the others.

How much support did you receive from Namco during the conversion process?
We got no help from Namco at all except a photocopy of a manual written in Japanese, which I saw only once. All we had was one arcade machine and it got hammered to death while we mapped the game out as best we could by playing it constantly. Some people might think that getting paid to play videogames was some trip but just try playing the same game for hours and hours, day after day and the fun soon wears off.

A few of the levels and secrets from the arcade game were noticeably absent in the C64 version. Was this because of lack of time, or wanting to get the game into a single load?
Some trips were omitted because of time pressures. Space was tight though, and even with what we did get done that 64K of RAM was literally full to bursting and we had no desire to do a multi-load off tape. We ended up having to compress some of the sprite and level data and were even using the 6502 stack for running code in, which was really pushing our luck. Even the tape loader over-wrote its own code at the end of the load.

Leaving out the standing on ghosts was Martin's call but again it was a time thing. Since the pushing the hydrant thing for the hard-hat and tree-stump level jumps were pretty tricky to do – almost like Easter Eggs – they were left off the must-have list till nearer the end and you know how that went. The coding would have been similar to how I did the quicksand but I suspect we'd never have been able to fit them in anyway.

Did you come up against any problems or technical hiccups during the conversion process?
The main technical challenge on the C64 was getting the full-screen, sideways scrolling to look smooth. All the sprite position updates had to happen during screen fly-back, which is when the video beam jumps from the bottom of the screen back to the top to start redrawing the next frame, but that also triggered the music and sound effects, and there simply wasn't enough time to do the scroll in one go without getting a screen glitch.

Lack of space was the other huge challenge and it also pushed us to use 40-column text mode, which meant all the graphic backgrounds had to be designed using custom text characters, and I was amazed at how well that turned out. I was very proud of what we produced, especially given my lack of games experience, and was well chuffed with the ratings it got.

GRAEME DEVINE

Meet Graeme. An intelligent model student who created a game for Atari and found his life turned upside down as a result. But, as he tells us here, the one moment he found himself in trouble proved to be the making of him. More than 30 years on, he has no regrets

Graeme Devine was one of the original bedroom programmers of the Eighties. He began to code as a teenager and, by the age of 16, he was working for Atari and porting some of its existing games. As he became more experienced, he did what so many of his contemporaries did and set up his own company, Trilobyte. It went on to create one of the classic games of its day, the groundbreaking CD-ROM title, *The 7th Guest*, which made full use of this emerging medium.

Graeme has been hugely successful for more than 30 years. He worked with id Software on *Wolfenstein 3D*, *Quake III* and *Doom 3*. More recently, he worked on *Age Of Empires III* and was the writer of *Halo Wars*. He was also in charge of ensuring Apple iOS devices could play games well. Today he is the founder and CEO of GRL Games, which makes games for smartphones and tablets.

» [CPC] Graeme's first work for Atari was the porting of *Pole Position* to home computer platforms.

As a 48-year-old, you would have seen the early days of computing. When did gaming become a part of your life?

It was when I was in school. My dad brought a TRS-80 home from work in 1978 or so. Now, at the time there was *Battlestar Galactica*, which I loved. I wanted to make a movie of it and so I got the Revell model kit and made the Viper, went to school and cut the front covers off some *National Geographic* magazines to get the starry background I wanted. I put it all into a cardboard box, put the Viper up and got my 35mm camera. I took a bunch of pictures and I was really excited that it would come out and look like it was in space but it came out looking like crap. That's when I thought to myself 'I could do this on a computer' – that I could just make the film on a computer on the TRS-80. So I learnt how to program the Z80 in assembly code.

How did you learn to program?

By looking through *Byte* and *Personal Computer World* magazines. I slowly learnt how to reverse engineer the ROM and I programmed a game called *Space Junk 3D*, which had these spaceships that would go across the screen in two dimensions but had a three-frame 'three-dimensional' attack. You had to press the space bar at the right time to make the spaceships blow up, in one frame of animation. To me that was just awesome – four frames of animation total.

Did you sell the game?

I did. It was my first game on a TRS-80 and I sold four copies to my friends, so it was a massive seller. Actually, I think I just gave it to them. But it was the start and my introduction to Z80 assembly code.

What other computers did you use?

Well the Sinclair ZX80, the ZX81 and the Spectrum came out and those had Z80 processors in them as well so it was natural for me to learn to program those as well. I made a software assembler called Soft Mon and then I made my first game, which was called *Firebirds* that was published by Tim Langdell at Softek Software. I was maybe 14 or 15 at the time and it became quite a reasonable hit.

Were you proud of it?

Looking back, it has its charms. It was kind of based on *Galaga* and *Phoenix*. It earned me my very first royalty cheque. I remember getting £654 and it was enough to go and buy a Sony CDP 101 CD player which was just brand new that month. I remember walking into some high-end audio place to go and buy this CD thing. I was a grubby teenage kid and there was all these rich people looking at the thing and umming and ahhing and not going for it because there was no content at the time. There were two CDs you could buy, you could buy Jean Michel Jarre's *Oxygen* and Beethoven's Fifth. I took out my £600, put it down – 'give me that'. It was quite a moment. I can also say, at one point in my life, I was one of the few people on the planet that had a copy of every single CD on the market.

As a teenager programming, were you thinking 'yeah, this will be a career for me in the future'?

No. I was still thinking towards university and computers were just really in their infancy. The Spectrum was awesome but it didn't seem like that was my career path at that time. I think like most 15-year-olds, you're not quite sure what your career path is going to be, but I started to get more and more involved in that world and going to ECTS. I met Jeff Minter and hung out with him and made more and more friends. Friends I still have today.

So it was quite a compelling scene?

The time when that very first band of people were making games was extremely good. We were sharing stuff and encouraging each other. They would frankly tell you when stuff was crap. It was a fun time but it still didn't seem clear that it was my career path.

But did you feel like you were at the beginning of something?

I think so. I think that was clear among everyone because we were spending 24-hours-a-day programming. It became my life. All I did was program, program, program, then learn and absorb and look at the computer magazines with the Atari 400 and 800 on the front and salivate over them. I'd see how awesome *Star Raiders* was going to be and I would wish hard that I would get the cash needed to buy those machines.

If you didn't get into computers, what do you think you would have done?

I'd have been an astronaut [laughs]. I think that was the key thing – getting that first computer. I don't think I ▶

> At one point in my life, I was one of the few people on the planet that had a copy of every single CD
>
> Graeme Devine

FIVE TO PLAY

A look at some of Graeme's key games that you should be playing

XCEL

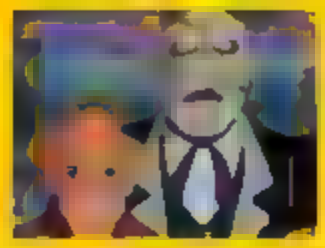
■ *Xcel* has some similarities to *Elite* on a superficial level. It involved locating a planet, guiding your ship to it and landing. But it was actually a shoot-'em-up, with an emphasis on exploring new lands and blasting away alien formations. Players had to find 30 installation planets created by a man-made race called the Sentinels. One reviewer said its controls and presentation reminded him of *Pole Position* – but that wasn't surprising perhaps given Graeme Devine worked on that game too.

THE 7TH GUEST

■ Graeme had a firm belief in the medium of CD-ROM and he was rather taken by the technology behind the CD- in particular. His idea for *The 7th Guest* led to him setting up Trilobyte and the game became CD-ROM's killer app not least because the horror story, told from the perspective of the player, showed ambition and brand new techniques. Its revolutionary graphics, live action video clips and a point-and-click adventure format was more than enough to carry it to 2 million sales.

THE 11TH HOUR

■ Since *The 7th Guest* had sold so well and had been very well received by critics and consumers a sequel was inevitable. *The 11th Hour* was set 60 years after the first game and it continued its theme with puzzle-based gameplay. It took nearly three years to make and ramped up the horror but – it has to be said, the plot was rather slow. Helping things along were treasure hunt sequences in which the players had to solve a riddle to find the right object.



CLANDESTINY

■ Graeme decided he wanted to create a third puzzle game at Trilobyte and this was it. Taking major cues from the previous two games, it continued the horror theme albeit from a more child-friendly angle. As the title suggests, it was also set in Scotland, Graeme's home country, although the accents could be difficult to understand at times. As expected though, the graphics were jaw-dropping and for those who had not played Trilobyte's other games, it felt fresh to a degree.

QUAKE III ARENA

■ As the designer for *Quake III Arena*, Graeme helped to make one of the best videogames of all time. A super-fast first-person shooter, *Quake III Arena* excelled during its frenetic multiplayer deathmatches. The game felt as if it had been taken down to the core of what a first-person shooter should be and it made it an instant classic. While Graeme had to adapt to working with another company, having struck out on his own, the result was certainly one to be proud of.

SELECTED TIMELINE

GAMES

- **FIREBIRDS** [ZX Spectrum] 1983
- **POLE POSITION** [Various] 1984
- **XCEL** [Amstrad CPC, ZX Spectrum] 1985
- **BALLBLAZER** [ZX Spectrum] 1986
- **METROPOLIS** [PC Booter] 1987
- **J R R TOLKIEN'S WAR IN MIDDLE EARTH** [Various] 1988
- **TURBO CHAMPIONS** [DOS] 1988
- **SPOT** [Game Boy] 1990
- **SILVER SURFER** [NES] 1990
- **WOLFENSTEIN 3D** [Various] 1992
- **THE 7TH GUEST** [Various] 1993
- **DOOM II** [Various] 1994
- **THE 11TH HOUR** [Various] 1995
- **UNCLE HENRY'S PLAYHOUSE** [Windows] 1995
- **CLANDESTINY** [Mac, Windows] 1996
- **QUAKE III: ARENA** [Various] 1996
- **QUAKE III: TEAM ARENA** [Windows]
- **QUAKE III: REVOLUTION** [PS2] 2001
- **COMMANDER KEEN** [Game Boy Color] 2001
- **DOOM 3** [Various] 2004
- **AGE OF EMPIRES III** [Mac, Windows] 2005
- **DOOM 3: RESURRECTION OF EVIL** [Various] 2005
- **HALO WARS** [Xbox 360] 2009
- **FULL DECK SOLITAIRE** [Various] 2011
- **DOOM 3: BFG EDITION** [Various] 2012

would have been in the games industry if it wasn't for that fortuitous event – I'd have been playing games but I don't think I'd have been making them.

Did you find programming much more enjoyable than playing?

Yeah, I think I still do to a certain extent. I would program with that Sinclair Spectrum and eventually the Atari and the Atari ST and the Amiga. I was picking up Fortran, stuff like that. If I could put my hands onto a computer I would immediately try to program it – I'd get games and press Control-C to break into them and look at the listings to see how they worked.

Was it the actual structure of the games, rather than the actual games, that fascinated you?

I like to look at something and think 'how would I do that? How would I solve that problem or get around that?' Back then computers only had 16K of RAM or if you had the super-duper one, 48K, but you really had to make everything run in 16K. The problem solving was very constrained. You only had a certain amount of memory and you had to do it in assembly.

Your work got you noticed and joined Atari at the age of 16, didn't you?

I saw a job advert for Atari in *Computing Today*, I applied and I took a demo of a 3D road to Atari's headquarters in Slough. I got the job. The problem was I was still at school but they asked me to port *Pole Position* to home computers. I'd soon find out that Atari could have a very direct effect on the health of a 16-year-old.

Why, was it quite intense?

They put a lot of pressure on me at one point to finish the game so I had to take a week off school to do it. When I came back I remember giving my chemistry teacher a floppy disk with the game on it. I was honest about it and I wrote a note to the school telling them I had taken the week off to work for Atari. Now, at this point I was a straight-A student, the guy who sat in the library at lunchtime rather than the one who hung outside and smoked cigarettes. I remember at the end of assembly being asked to see the headmaster. He said, 'well, I'm sorry, this is a bit too much, I can't have this kind of behaviour going on at the school, please hand in all your books. I'm going to have to expel you.'

What? Really?

Yeah. I was expelled from school for being honest. It was shocking for all the teachers and I was just so taken aback that I couldn't believe what had actually happened. That was the point when I decided not to go to university. I was 17 and coming up to my A-levels at this point and I just wanted to continue my career in the games industry and start my own companies. School had betrayed me.

What happened with your exams, though?

I ended up finishing off my A-levels externally. I'd already applied for universities by the time I was

Amiga As well as leading projects, Graeme has been a production assistant on many games including *J R R Tolkien's War in Middle Earth*.

▶ *The 7th Guest* became a major reason for owning a Philips CD-i given its pioneering use of the CD-ROM format.

expelled and remember visiting the University of London and the guy who taught programming there taking me to one side and asking why had put the others universities down. None of them had a good computer programming course, he said, and he was impressed by *Pole Position*. He took me around the computer rooms which had those Tektronix displays that you saw in *Battlestar Galactica* and I was saying 'oh wow'. He actually gave me an FFF as entry level so all had to do was fail my three A-levels. And still I didn't go. I wanted to get right into making games.

Did things work out well at Atari?
When Atari got bought by Jack Tramiel, I started working on *Ballblazer*. Atari called everyone down, maybe 200 of us in Slough. Everyone but 12 people were called down and everyone was like 'wow, they're going to lay off 12 people'. Nope. It turned out they were laying off 88 people and 12 were staying. So my first experience was to not have a job anymore.

But *Ballblazer* still got a release, didn't it?
At the time *Ballblazer* had started out as an Atari game with Lucasfilm Games. Lucasfilm Games reached out to me through Activision, which published the Epyx games in the UK. I wanted me to continue working on ports because the Spectrum version was looking good and I was doing the Amstrad CPC version. I got to understand the game and the techniques well so when it came to the PC and the Microsoft MSX versions, I was kind of the advisor guy. I got more and more involved with Lucasfilm Games and Activision.

Where were you living at this stage?
London. I was working at Joan Collins' apartment in London because that's where the Activision headquarters were. It was awesome because they had beer in the fridge but I was the only person that actually made games there. Everyone else was in sales and marketing or PR. I remember they sent me up to Manchester at one stage but I went through Heathrow Airport and got food poisoning. I got myself to hospital and, of course, the nurses were on strike and I couldn't get in but I fell down and eventually people came running out and I was really bad, I was in hospital for seven days. And Byron Turner from Activision, came up and said 'I just quit my job at Activision because they wanted me to bring you a Commodore 64 so you could keep working in hospital and I said no' I quit working at Activision too.

Wow. So what did you do?
I started my first company called Program Techniques with someone I knew from school. His cousin had a company in Covent Garden and we made the game *Xcel*. It was the first game I'd put out on my own so I learned everything about cassette tapes, publishing and advertising. I realised I was really good at making games but not really good at making cassette tapes. Our first royalty cheque was £28,000, though.

That's a nice sum for a teenager at the time.
It was but my friend's cousin took £25,000 out of the bank so that wasn't too nice. And then my friend actually got addicted to cocaine and it got pretty bad so I had to fire him and that was kind of the end of that company.

Time to move on then?
It was. I met someone called Paul Braithwaite in London. He was a PR specialist and he once told me, 'Graeme, never, ever, ever say that you're doing awful if someone asks how you are doing. When people ask, they want to hear that you're doing awesome.' I've always stuck to that advice. He introduced me to the people who helped me set up my second business, which was IC&D. That stood for Industrial Concepts & Design but always really Ice-Cream & Doughnuts. I was the person owning it and running it and he got me set up with good people to get the accounts and the VAT and everything going. I moved back to Crawley and back into my parents' house and started my company there. I employed Tim Ansell, who later started The Creative Assembly, and we started to make games together. We made *Metropolis*, *Turbo Champions*, *Enterprise* and a gazillion ports of different things.

You published your games via Mastertronic, didn't you?
Yes, they became our publisher and we became their go-to people for stuff. An American would come along with a game that only ran on a Commodore 64 and we would look at it and say 'we can have that running on a Spectrum in four weeks, no problem'. So that was our job for a little [while]. Oh, and we had the tallest mountain of Coca Cola cans in the office.

Did IC&D do very well?
IC&D was doing okay but I think it would have gone on in the UK and only continued to do okay because our competition at the time were companies like Codemasters. But one day a publisher called Martin Alper called up and said 'we're starting this office in California and we need somebody to go across there and tell them how to turn on computers' no-one

> "I realised I was really good at making games but not very good at making cassette tapes" Graeme Devine

▶ Unfortunately for the family we're not satisfying these days. Have he is enjoying [illegible]

▶ [PC] Real-life actors were used for *The 7th Guest* although Graeme had some blue screen problems.

▶ [PC] *The 7th Guest* was an adventure which some teeth-chattering discoveries.

> "All I did was program, program, program, then learn and absorb and look at the computer magazines"
> Graeme Devine

has any idea at all how to run any of the games or how to look at anything or even check them out and make sure they work alright was supposed to go for six to eight weeks, just help get the studio running. That was 1988

Was it a culture shock?
Everyone was in their 40s which is my age now but then was 22 and I remember thinking to myself am going to be on the first boat back in two weeks unless make some friends here who are in my age group At that point I didn't drink but across the road from my apartment there was a bar called Jasper s went across, learned how to drink American beer and met my wife We were making games like *Spirit Of Excalibur* and *Vengeance Of Excalibur* and *J R R Tolkien's War In Middle Earth* We did ports of *Double Dragon* and games like *Monopoly* and *Scrabble* and *Clue*. think we were publishing a game a day at one point I would get most of my money from Mastertronic by taking games that took up two floppy disks and making them fit on one floppy disk, because I was really good at compression Then this thing started to come out to do with CDs.

Was this the moment you fell in love with CDs all over again?
Well, Rob anderos and I started going to a whole bunch of multimedia conferences because CD-i was going to be the big thing. At that time on TV *Twin Peaks* was huge and we had the licence to Clue and so Rob anderos and started to plot around how we could go and make a David Lynch-like *Clue* game. remember being at New York City Airport where we had a napkin and wrote the outline for this CD-based game We went back to California and worked on the game design. t was turning out to be *The 7th Guest*. So we went to Martin Alper and said 'we want to make this CD-ROM He took us to lunch and promptly fired Rob and He said he didn't think t would make any money but that we should go off and form our own company to make it because it was important to embrace new technologies For Mastertronic, CD-ROM was not the future So we went off and founded Trilobyte

So were you convinced that CD-ROMs were the key to the future at that stage?
At that point we had clear vision that we could make moving video come from a CD-ROM and that we could make puzzles that would be interesting for people to play It would be unlike any visuals that had ever been seen before When *The 7th Guest* came out, there was no game with graphics like it It was a reason to go and buy a computer and we were convinced that this was. overall, the right direction

The game made extensive use of movie footage. How did you go about getting that all together?
We talked to a bunch of authors and in the end Matthew J Costello was the only one who agreed to make a script for us We contacted a local director in Southern Oregon and he said he could do it but he d never done blue screen so we made this blue screen thing out of violet paper and shot and filmed all of the footage above a comic book store in Midford, Oregon, in two days on Super VHS, with a fantastic group of actors and people

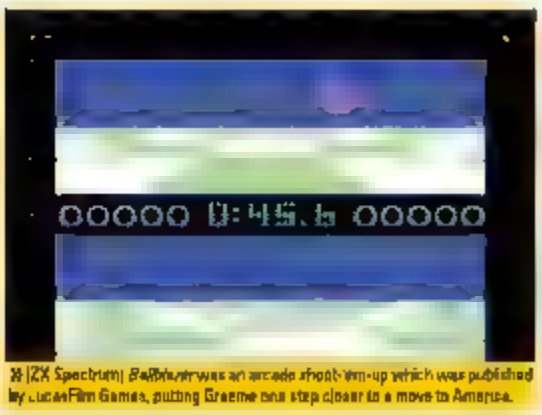
Were there any problems?
Our blue screen was terrible and one actor actually fell through it and tore it up so we had to put up blue tape Then we had the huge technical problem of taking the blue out of all of the video and we couldn't actually do that because our blue screen was so bad and had so much red in it as well that it was actually impossible. The reason the ghosts in *The 7th Guest* have such bright auras around them is because our technology at the time did not let us take out all of the blue screen

The game did very well – it sold 2 million. Was that turning heads?
Yes, it did okay! Nintendo bought the rights to the game because they were very scared that Sega would buy it for the Sega CD system. We actually got to meet Miyamoto He came out to Southern Oregon and had a barbecue with him at my house, sitting out looking out over the Rogue Valley At that point he didn speak any English, so there was also a translator

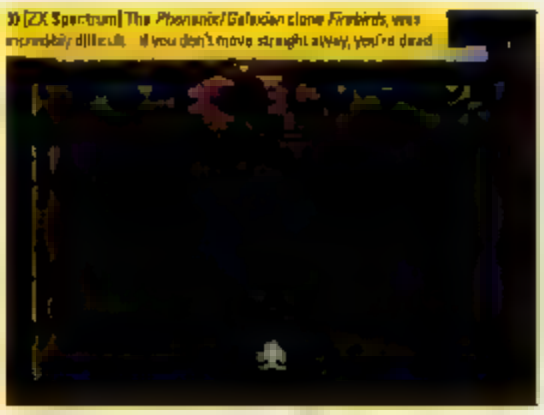
Was Miyamoto pressuring you into a sequel?
No, he told us about his point of view on CD-ROM which he believed was never actually going to take off because a four-year-old could not put a CD into a console and be assured that t would work properly Nintendo was all about four-year-olds being able to put a cartridge into their system and have that thing come on and be solid. For him CDs could go in upside down and that's one failure. They scratch easily and smear That was enough fails at the time

But you did make a sequel
We had intended to move on and make a game called Egypt but Martin Alper called up and said we should make a sequel But Rob and lost our synchronicity on making the game He started on *The 11th Hour* while I was still finishing *The 7th Guest* and we never got back in sync, ever He went in a different direction than would have gone in, just out of necessity. there's no blame We got investment from venture capital because of the success of *The 7th Guest* and we really had no idea how to handle that Rob s a fantastic artist, I'm a fantastic game programmer, we're both fantastic game-designers but we had no idea how to handle the influx of millions of dollars but we thought we did We made more money from *The 11th Hour* than we did from *The 7th Guest*, though But he had started to make *Tender Loving Care* and I started to make *Clandestiny*.

When Trilobyte closed, you went to work for id Software. You were going from owning a company to working for somebody else.
That s always weird but don't think ever thought of the transition in that way I was coming to terms with having a three-year-old kid and a wife I'd been constantly working for nine years and never really noticed that most valuable thing, my family, had been the thing that hadn t been with. When went to id had a new outlook on life of family first. Anyway,



» [ZX Spectrum] *Ballblazer* was an arcade shoot-'em-up which was published by LucasFilm Games, putting Graeme one step closer to a move to America.



» [ZX Spectrum] The *Phoenix*/*Galaxian* clone *Firebirds* was unbelievably difficult. If you don't move straight away, you're dead

GBA Graeme has worked on many different platforms over the years, including handhelds

PC Graeme has made a good number of games for the PC, including *Age of Empires III* from 2005

never thought of myself as working for John, always thought of myself as working with John

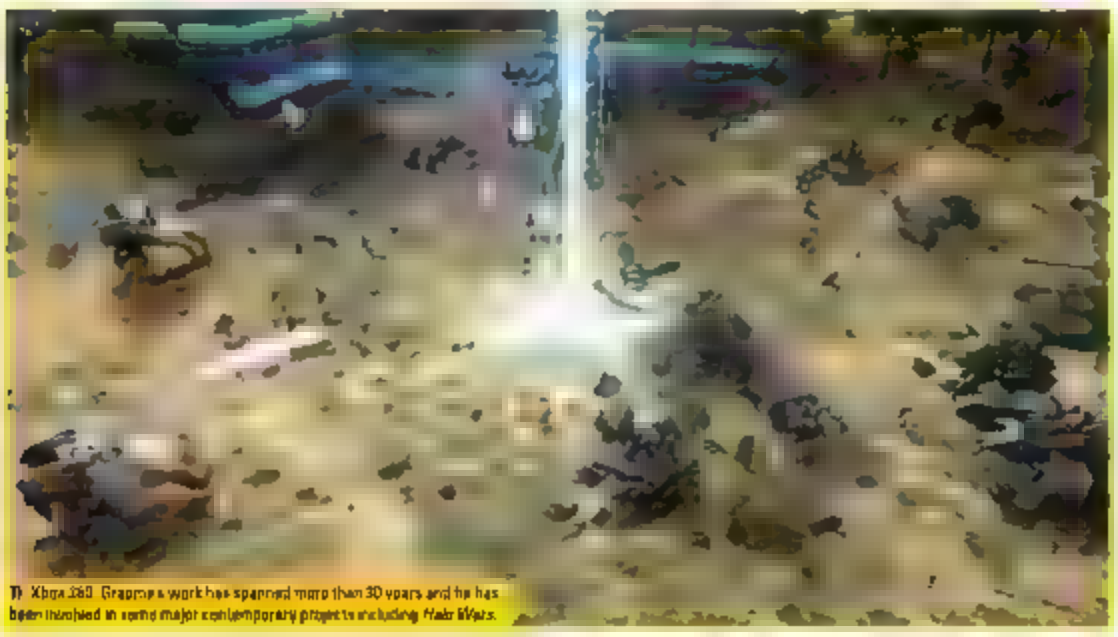
How different was working on something like *Quake III*, though?
So, so different but it was another time of fast focus on a game for a very short amount of time We started off as 12 people and ended up as 17 people. We had daily play tests and we had daily arguments about the gun spread of the shotgun should it have 10 shells or 12 shells, should it do 90 downage or 91 downage per shell? An absolutely incredibly creative time, making that game. Everything from adding the menus in, because John didn't want menus, to be able to add a single-player box in so that you could play it as a single-player and t wasn't just online All these were huge, huge, huge design decisions inside the game, that seem obvious because all games have menus, all games have single-player modes, but they weren't obvious at all with *Quake III*

Did you look back at the collapse of Trilobyte with regret, though?
think the best point of my life was actually the failure of Trilobyte because it was the best and the worst t hurt the most but now hang out with my daughter every single day and come home to my family and m still married 25 years later

And you don't look back in anger to when you were expelled?
That's what kept me in the game industry, and I'm probably making games because of that

In 2009, you were hired by Apple at the end of that decade in charge of looking at games for iOS devices. With the indie scene given a boost by smartphones and tablet, did it feel like going back in time?
Yeah and the same feeling exists at GRL Games which run now It does remind me of coming back to the Eighties and being that Eighties guy again except now 'm having my games sold in 92 countries across the world by Apple and royalty cheques are on time. In some ways it's a very different industry because the business part of it is all very clean now, it's assured, so that's much better for small developers. But yeah, often think of the full circle thing and how it's actually been useful for me

Is there a misty-eyed look at games, though, where we kind of think all the games in the Eighties were great? Did you feel frustrated at the relatively primitive tech you had to hand?
No. t was always the challenge of how do fit that into that? How can make that smaller? That's one of the disappointing things see in programming nowadays, is that someone will just go and make a 2GB array of data just because they have 2GB around. And there's so many ways to do this better, you could do this in 2k if you thought about it and actually worked on it a little bit Games were great back then.



Xbox 360 Graeme's work has spanned more than 30 years and he has been involved in some major contemporary projects including *Halo Wars*.

YOU ASK THE QUESTIONS

Graeme turns superhero when he goes to buy a coffee...

MERMAN: Do you think it was right for *Quake III* to concentrate so much on multiplayer without providing the strong single-player mode story?

Absolutely People still play *Quake III* today and, it's one of the most well-balanced multiplayer experiences that you could have on the planet because we focused on that and we made that awesome We could have divided our focus and made a single-player story-based thing as well as the multiplayer game but t wouldn't have been the fantastic multiplayer experience that was *Quake III*.

MANCMAN: Seeing as most PCs at the time had floppy drives were you worried at all about making *The 7th Guest* available exclusively for CD-ROM?

Well, we were told to make a floppy disc version But yes, it was obviously a huge risk because there were no CD-ROM drives out there at the time We bet the farm on it being the future and fortunately t became a standard.

CRUSTO: Do you wish you had designed *Half-Life 2*?

Nope If did it, it wouldn't be the great game *Half-Life 2* is That would be a different game. would like to make a game with Valve someday because their process sounds innovative

POSTLEDOC: Were you disappointed with how *The 11th Hour* turned out?

Never! was disappointed that we never quite got in sync for the game and think that led to the company falling apart, or at least had the seeds of that. But can't live by the past only learn for the future.

JDANDDIET: Do you get annoyed when people spell your first name incorrectly?

Only at Starbucks. I've learnt to go with the backup name of Batman because that one always works

RJ MICAL

From the arcades to the 3DO via the Amiga and Lynx, RJ Mical is a celebrated figure in the hardware and software business. He tells us about three decades of making stuff people want to play with

Whether he's producing great games, coding intuitive operating systems, designing groundbreaking hardware or writing novels, RJ Mical is happiest when he's being creative. At the age of 14, he built a bespoke Tic-Tac-Toe machine from bulbs and relay switches, which played a mean game of noughts and crosses and drained batteries for fun. After graduating from the University of Illinois, he joined Williams and contributed to some of its memorable arcade coin-ops before becoming a key player in the development of the Amiga computer. He was co-designer of not one but two prescient consoles in the shape of the Lynx and the 3DO and currently has his game face on at Google. He also enjoys paragliding, travelling to exotic lands and coming up with bizarre brain teasers. We suspect the 'R' in RJ stands for 'Renaissance Man'...

Since 2008, you've circulated a weekly conundrum called the Monday Morning Tickler. Is creating software and hardware a bit like a brain teasing puzzle?

(laughs) Fascinating. Yes – I send out a little puzzle once a week and I'll happily add any of your readers to the list! I worked out a long time ago that I had a bunch of talents and the best thing to do was to find something that brought them together in endeavours that took advantage of more than one of them. That's why I started doing videogames – I love art, I love music, I love animation and films and games and software and computers – there have always been many pieces that fit together into a whole.

You graduated with a degree in Computer Science and English plus a minor in Philosophy. Has that mix of science and the arts helped you during your long career?

Every day it helps me. I learnt to be a good communicator and I was exposed at a young age to some of the fundamental questions we have to ask ourselves. That's helped me as a game designer and a designer of software humans have to use. I was especially interested in metaphysics, the rules about the rules, which is fascinating for a game designer. And when I start designing software, I write it out as a short story first and then fill in the code so it does what the narrative says it should.

You joined Williams in 1983. What do you think it saw in you back then?

The only guy there that saw a flicker in me and decided to give me a chance was Noah Falstein. He and I have remained friends ever since and have worked on many projects together over the years, including right now at Google!

Your first project with Noah was *Sinistar*. What was your role on that game?

It was well underway by the time I joined the team but what they didn't have was the pizzazz! The core game was done but I got to do the explosions, the special effects and all the cool stuff.

***Sinistar* is famous for its speech. Do people still come up to you and bellow 'Beware I Live' and 'Run Coward!' from the game?**

All the time! (laughs)

You then coordinated the *Star Rider* project, Williams's first and only laserdisc game.

Star Rider was quite an undertaking. We had these wonderful design sessions where we'd challenge ourselves to think of alternate ways to think about games and game hardware. We tried to dream big and come up with industry changing ideas. Laserdiscs were very expensive and the cabinets had to be really well built to withstand the shaking customers gave them and not let the laserdisc skip. It was a real feat of engineering but in the end I found the game was boring. You were just rolling through a movie and didn't think there was enough excitement in there.

It's a very surreal game, like *Easy Rider* after they've taken the acid. Did you want to create something of a 'trip' with *Star Rider*?

(laughs) Yes and no. We didn't sit down and say 'let's create something really trippy' but yes, a lot of my contemporaries had had those experiences. It was part of our culture. And at Williams, there was a lot of partying, when no one was looking, out in the parking lot. It was a pretty loose crowd. There was a certain *Yellow Submarine* quality to that game.

It was just 'your contemporaries' partying then, not you?

I thought I managed to dodge that one – I'm not unknown for experimentation. Let's leave it at that.

What prompted you to leave Williams in 1984 and join the fledgling Amiga project?

There was a healthy amount of networking once the Amiga project got underway and they invited me to join them but I blew them off – twice. It was a bit too weird for me, a bit too outside the experiences I'd had. I was a kid, just starting in the industry and I had a good job that I enjoyed at Williams. This was a start-up in California and they wanted me to relocate and leave behind my family and friends in Chicago. It was scary. I ditched the first two times I was invited to see them.

Why did you turn up the third time they invited you over?

Noah Falstein dropped a videogame on my leg! Noah, me and a guy called Rich were co-owners of the co-op *Red Baron*, an awesome game. We were trying to move it one day and it fell off the dolly we were transporting it on. It was going to crash but rather

> "At Williams, there was a lot of partying out in the parking lot when no one was looking"

SELECTED TIMELINE

GAMES

- SINISTAR [ARCADE] 1982
- STAR RIDER [ARCADE] 1983
- DEFENDER OF THE CROWN [VARIOUS] 1986
- ELECTROCOP [LYNX] 1989
- CALIFORNIA GAMES [VARIOUS] 1989
- BLUE LIGHTNING [LYNX] 1989
- GATES OF ZENDOCON [LYNX] 1989
- ESCAPE FROM MONSTER MANOR [3DO] 1993
- TWISTED: THE GAME SHOWZ [3DO] 1993

HARDWARE

- AMIGA 1985
- LYNX 1989
- 3DO 1993

FIVE TO PLAY

Five great games that RJ had a hand in

SINISTAR

■ RJ's videogame debut was this impressive, cackling shooter with its memorable speech and merciless desire to crush and consume your tiny ship. Set in hostile deep space, you must mine crystals from asteroids, which become valuable sinibombs. Whilst fighting off the immediate threat of enemy warrior ships. Meanwhile, a dedicated fleet of workers construct the ominous *Sinistar*–a giant, hungry mothership which on completion, pursues you with a roar and the sneering taunt of 'Run Coward!' The development of *Sinistar* was a difficult and convoluted one (see our Making Of in RG 125) but RJ helped add the 'pizzazz' that makes it a fine addition to Williams's roster.

STAR RIDER

■ We know we're being churlish suggesting this is one to play. The unreliability of laserdisc coin-ops and the limited release of Williams's only entrant into the genre makes it unlikely you'll find a *Star Rider* in the wild (though we do know there's an original sit-down machine awaiting restoration in Funspot arcade's workshop). Emulation is also a challenge given the esoteric technology and besides, a big part of the experience was clambering onto the futuristic cycle in an Eighties arcade and imagining you were riding off into a surreal digital sunset. However, we urge you to at least watch a playthrough on YouTube or the like.

DEFENDER OF THE CROWN

■ RJ's key role in developing the Amiga computer meant he was in a perfect position to become a consultant to software developers as the machine found its feet in the mid-Eighties. He lent his skills and insider knowledge to many titles but his work on *Defender Of The Crown* was particularly crucial. When development hit trouble, he stepped in to help bring it to launch and it remains one of the defining releases of the Amiga's early years. Its tale of the Norman-Saxon power struggle for Medieval England was a showcase for the capabilities of the new machine and it established CinemaWare as a major creative force. Anyone for jousting?

ELECTROCOP

■ RJ had a hand in all six of the Lynx's launch titles but was most involved with this attempt to bring a 3D maze game to the handheld. *Electrocop* has your heavily-armed law enforcer bounding through a fortress in search of the President's daughter, kidnapped by the imaginatively named Criminal Brain. Blasting the diminutive robot Walkers that patrol the corridors is satisfying and logging into a terminal to access some simple mini-games, including a rather sedate version of *Breakout* and a more rounded stab at *Asteroids*, is mildly distracting, though the game would benefit from more variety. However it's a nice example of the console's potential and needs to be played.

TWISTED: THE GAME SHOW

■ Of all the 3DO games RJ was involved with, his biggest contribution was to *Escape From Monster Manor*, which he describes as "a B-title, not a strong player but a little 3DO miracle." It was an interesting attempt to create a distinctive first-person shooter for the new console but given the proliferation of the genre since then, it hasn't aged particularly well. *Twisted*, on the other hand, remains a marvellously oddball release and one that genuinely tried to utilise the machine's multi-media features. This collection of mini-games, ranging from simple slide puzzles to aural memory tests and trivia questions, is dressed up as a bizarre gameshow, complete with suitably deranged contestants and a manic host.

than let that happen, threw myself underneath it. I damaged my knee but saved that videogame.

Erm, good catch but how does that lead to you joining Amiga?

I was laid up because of my knee and couldn't join my friends on a trip we'd planned so instead I accepted this invite from Amiga. It was just something to do while my friends were away. I went to California on Amiga's dime, hobbled around their offices on crutches and interviewed there. It was love at first sight! I couldn't believe my good fortune that those guys were offering me the opportunity to be part of it. I said yes right then and there.

How far along was the Amiga project when you eventually arrived?

I was one of their first engineers. There was nothing but ideas and mechanical drawings when I got there. I don't think they'd even started laying out the silicon at that stage. The building was largely empty when I arrived and over the next year, we watched that baby fill up. We ended up jamming ten people into our poor little software lab. It was truly a wonderful little start-up environment. We had that good mental spirit and everyone was pulling at the same rope. I often miss that camaraderie.

You are famous for your work on Intuition, the Amiga's operating system. Were you motivated by a desire to make computing more accessible to ordinary people through a friendlier interface?

Me and the others at the company were used to having access to computer power but our moms and brothers and sisters weren't yet. We wanted to make a personal computer that had all this great power, these colours, this great sound, at a price that anyone could afford and with a user interface that was accessible to my mom. I often used her as my mental model when I was designing Intuition. We called it that on purpose. It was easy to understand and you

» The Amiga undressed in 1985, when her close friends knew her as Lorraine.

didn't need to be a rocket scientist and remember 8,000 keys to use it.

It sounds like you really wanted to make a 'people's computer' that everyone could use, not just the IT-literate elite.

It's a far more cynical time now and it's hard to imagine a bunch of kids getting together and saying they're going to build a new computer. We were young and naive but ambitious and the philosophy of the thing was as noble as you describe for many of us. We were trying to change the world! We were convinced what we were doing was the right thing for humanity, for civilisation.

The Amiga was undoubtedly a great success. Why do you think it did so well?

I think we hit the demographic we were aiming for. I got a letter the other day from a guy I'd never met who wanted to thank someone for the Amiga computer. It had changed his life. He'd had this moment of revelation and instead of doing what he had expected to do, he saw the power of the Amiga and had this desire to do computer graphics. He's now a well-established figure in the industry and he said it was the exact moment when he saw the Amiga that changed who he would become in life. It's stuff like that. Bringing that joy... we reached the people we wanted to and changed lives.

What were your thoughts on the Atari ST, usually seen as the Amiga's main competition?

The ST/Amiga rivalry was something that existed in the press and shows up a lot in the history books but from our perspective, we didn't feel we were competing with them. We knew the ST engineers and some of them were really good friends. They got a late start compared to us and were up against the calendar. They worked amazingly hard, burning the candle 24 hours a day, and they did a spectacular job. They got a device out that was almost competitive. It was an awesome effort but I never considered it a threat. To me, it felt like a less matured effort. The Amiga's user interface, its display capabilities, the quality of the software that soon became available for it... all these things piled up against the ST.

You became Director of Software at Amiga but then left in 1987. Had something changed at the company in your opinion?

I had a long chat with my boss, Dave Morse. He was an amazing person and a great confidant. We talked about what Commodore's acquisition of Amiga would mean and one of the things he said was if I was going to capitalise on the things I had learned at Amiga, I should start my own consulting company. So I did! I was in position to help a lot of people make their Amiga software better because if anyone knew that machine, it was me. I had a lot of fun and worked on a bunch of software.

One of the games you worked on was *Defender Of The Crown*. Is it true you made Kellyn Beeck slide instructions under your door so he wouldn't disturb you while you coded?

Yeah, there was that one time. (laughs) That game has a chequered past with me, which is why I don't mention it on my resumé. It didn't have the best business outcome. There were some dicey players and I was a new contractor just cutting my teeth. I learned the hard way. I haven't talked to any of those Cinemaware guys since.

Was it around this time that you had the idea for a handheld games console?

Dave Needle, Dave Morse and I decided to create a colour handheld game device and in quintessential Silicon Valley style, we sat at a restaurant and drew the basic block diagram on a napkin. It was Morse's job to find the funding for what would become the Lynx but what he found was Epyx. They had the money and we'd become part of them. We set up a proper business agreement to do it for Epyx rather than on our own. The big attraction was that they had an entire games development staff and they had games. So that we could get on to the Lynx right away. We'd be partners... we'd be brothers.

> **“With the Amiga, we were trying to change the world. We were convinced that what we were doing was the right thing for humanity”**

How do you start planning when developing a new console? Is it 'what would a dream system have' or 'here are our limitations, what can we do within them?'

I guess the answer is we spent the first few months just discussing what could it have. Once we started doing the research and found out the limitations we would encounter, then it became 'what's the best we can do given the constraints?' but that didn't come for quite some time. Like with the backlight... we knew it was a critical feature because we wanted the biggest and brightest display we could. The reality was that the technology we looked at was so expensive. There were viewing angle problems and hotspots from the light, all kinds of things. Then the magical

» *Blue Lightning* was a fine demonstration of the Lynx's superior power over the Game Boy but the biggest guns don't always win.

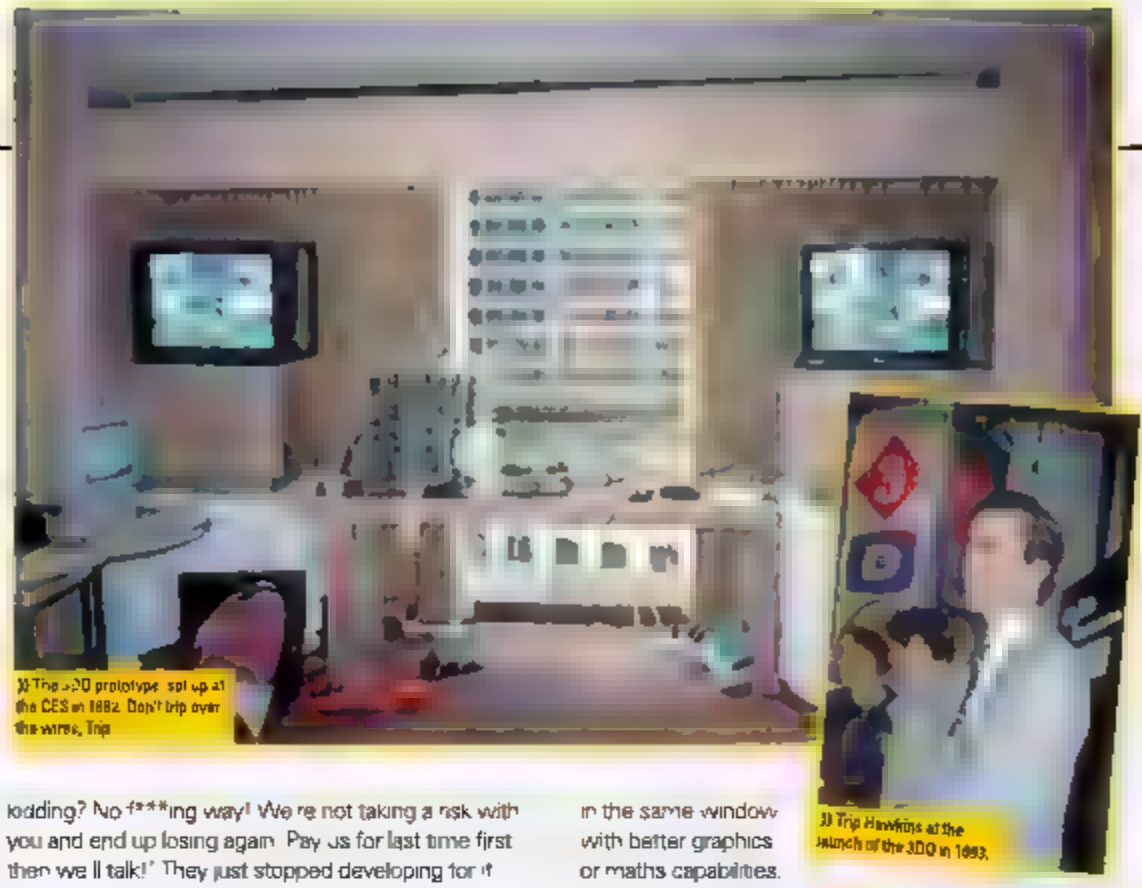
» "The Amiga was a work of love" enthuses RJ. Even Andy Warhol fell for its charms.

day came when a guy found the answer and we realised we could have a gorgeous display!

When Atari got involved, were you pleased to have a big name on board or wary it would compromise your vision for the Lynx?
sighs We weren't worried about them compromising the vision but we were concerned about them compromising the company From our own direct experience and that of our friends, we knew the reputation of some of the players at Atari was substandard. We were worried the Lynx project would get caught up in that It troubled us and we wished it wasn't happening. We told Epyx if the deal went ahead, we'd walk They went ahead. so we walked.

You must have been devastated at leaving behind the machine you'd invented before it was even officially released.
t hit Dave [Needle] harder than me, think but we were both frustrated with the outcome. We'd worked hard and inspired a bunch of people to get involved with that wonderful project and to have it end that way we told everyone what would happen and then it happened! Some of the people involved with the new ownership of the Lynx had really bad reputations with hardware manufacturers in Asia and with software developers all over the world. Everyone knew about these guys. Suddenly all these sweet deals we'd made for low-cost parts for the Lynx dried up on them. They'd be like, 'We remember you from five years ago Guess what - the price just doubled '

So you think if Epyx hadn't gone with Atari, things could've been very different for the Lynx?
I'm not the business head guy but yes, think if Epyx had found a better path. but they were out of cash. We showed it to Sega and hoped they would buy it instead of them doing what became the Game Gear. If they'd bought the Lynx think that could've completely changed everything. Even if Epyx had managed to scrape together the money themselves and released it at the price we believed we could hit, which was low, like under a hundred dollars, things could've been very different. Even more important a factor than the price was the software. We had deals with all the major players and we'd worked out a magnificent library of software for the Lynx for when it shipped but after Atari took over, they all said, 'Are you kidding? No f***ing way! We're not taking a risk with you and end up losing again Pay us for last time first then we'll talk!' They just stopped developing for it



» Trip's 3DO prototype set up at the CES in 1992. Don't trip over the wires, Trip

» Trip Hawkins at the launch of the 3DO in 1993.

Undeterred, you began designing another console, again with Dave Needle and Dave Morse. and again you sketched it out first on a restaurant napkin!
Yup believe Needle has the Lynx one, have the 3DO one

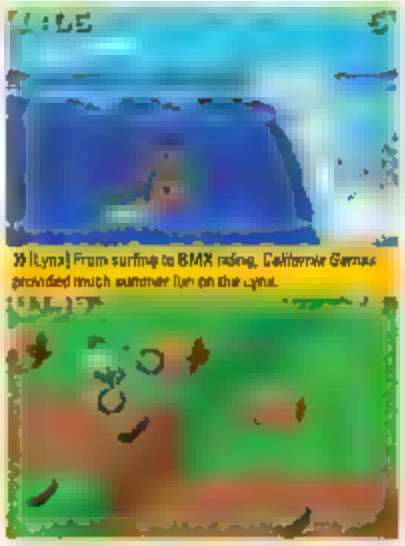
This was to become the 3DO, another forward-thinking machine. What was your initial vision for the console?
The goal was to put out something low-cost with state of the art hardware so no other machine could launch in the same window with better graphics or maths capabilities. In addition, we wanted it to be the first system to ship with a built-in CD-Rom The advantage would be the sheer amount of content we would be able to pack into a game.

> "Trip Hawkins had us all believing that the 3DO would be built into the walls of houses!"

How did you feel when Trip Hawkins got involved? Were you excited or a little tentative?
We were sober about it We were concerned about a lot of the stories we'd heard about Trip in the industry and what it would be like to work with him and what independence we'd be giving up We were mildly apprehensive about that part but on the other hand, this was Trip Hawkins, who'd founded the largest software entertainment company on the planet! He's had some highs and lows with various companies since then and he's kind of like the rest of us now, but back then, he was the Electronics Arts guy who was taking the game to the next level.

What did he bring to the 3DO project?
Trip was, and still is, an awesome salesperson for a concept He can talk it through and get everyone sat round the table to say yes He's a consummate professional. A performer, a presenter a communicator of ideas. he had us *all* believing that 3DO wasn't just a great system, it had the potential to change the way we did entertainment in our homes He had us all believing the 3DO would be built into the walls of houses It would stream in stuff and you'd have screens hooked up to it all over the house. t was your internet access your movie access. it was truly prescient and a lot of that came from Trip

» Rik is convinced that the fate of the Lynx could have been very different if Atari hadn't taken the reins

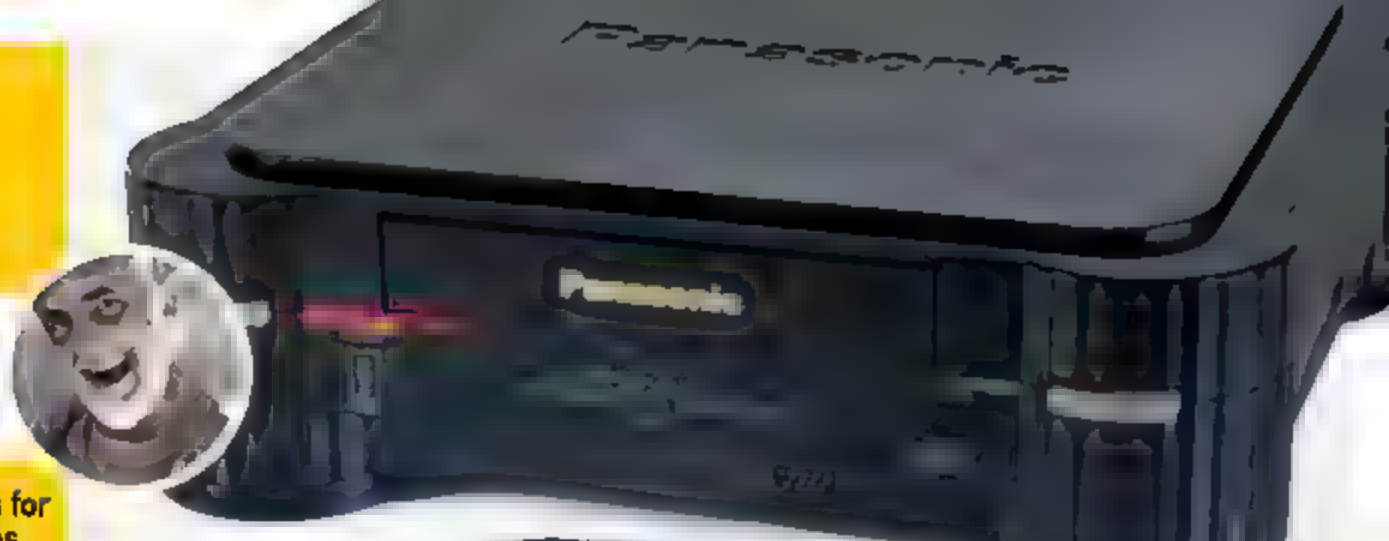


» [Lynx] From surfing to BMX racing, *California Games* provided much summer fun on the Lynx.

The 3DO sadly never quite delivered on its early promise. What do you think went wrong from your perspective?
The hardware was great, think the operating system was awesome and in the beginning there was a lot of respect for Trip and the 3DO t was being embraced by the industry and the public the value of the stock gave us the financial muscle to get the thing out there and then they brought it out at that ridiculous price

Do you see the high price tag as the key mistake?
Absolutely The thing that makes Nintendo, Sega and

YOU ASK THE QUESTIONS



We were inundated with questions for RJ. Here is a selection of his replies

NORTHWAY: Did you see the 3DO operating system as like the Amiga mark two?

We got better as the years went by. The first Amiga operating system was truly created by kids but the next one was better and the next one was better than that. When we got as far as the 3DO, we finally knew what we were doing (laughs). The 3DO was a professional device. The Amiga was a work of love. It was a noble pursuit, we were giving something to the world and I've never had an experience like it since.

SZCZEPANIAK: Who were Fred and Deforis, the 'mentors' you've referred to in the past?

They were a wonderful, wise, well-travelled couple in their 50s. He was the Dean of the College of Architecture and Art and she was the librarian at the University of Illinois where I went to school. They kind of adopted me into their lives when I was 19. They put their arms around my shoulders and helped me learn and grow. They really changed my life. With the 3DO, we created two graphical techniques which we couldn't think of good names for so we called them Fredlusong and Deforiszing!

ANTSBULL: What was it like working with Jay Miner?

I've spoken about how the Amiga experience has so much heart. Well, a lot of that came from Jay. He wanted the Amiga to change the world and we became believers in his religion! In the final dark days before Commodore bought us, when it looked like we were going out of business, it was Jay who took out a second mortgage on his home so we could keep operating. He was that kind of guy. He was the king of Amiga and I miss him so.

MERMAN: What game made the best use of the hardware you designed?

That's a hard question! The one that took me off guard and took advantage of the system as well as being an enjoyable experience would be *F/A-18 Interceptor* on the Amiga.

» The 3DO may have been a commercial failure but it was undoubtedly a prescient bit of kit. Unlike some consoles the hardware itself needed to make a profit.

» 3DO: From grim reapers to hanging men. *Escape From Monster Manor* was a creepy take on *Wolfenstein 3D*.

now Microsoft work is those guys make their own hardware. They are incentivised to make it better and more cost effective because they'll realise profits from the software. In the early days, they can even lose money on hardware. In the 3DO's case, you couldn't ask Panasonic to lose money on the hardware! They weren't interested in selling the console at a loss so 3DO could make money on the software. No one saw that, all the way up to Trip, and I include myself in that.

Could something have been done to lower the retail cost and get more units sold?

None of the manufacturers were prepared to drop the price because that's what it cost to produce and they had to make a profit. Way too late in the day, we realised we needed to pump money into their coffers, so 3DO raised the royalty on software and gave it to the manufacturers but by then it was already too late. The 3DO had got what one of my friends in the industry calls the 'stink factor'. Once something smells bad, it always smells bad and every time you hear the name, you wrinkle your nose a little.

Were you involved with developing the Panasonic M2? Could it have been a PlayStation beater if it had been released?

I was involved but not directly. I had a position called 3DO Fellow by then, which meant I could get involved with anything I wanted to. I was part of the M2 design meetings, especially the operating system, but not so much the hardware. As for competing with the PlayStation, I don't really know what they were planning for the games side.

You left 3DO in 1995 and for the next decade you were involved in many interesting start-up projects, including a proposed handheld console for Ericsson.

I'm so heartbroken that never saw the light of day. It would have rocked. Imagine the Sony PSP but more rounded, looking more like a Lexus than a Mercedes. It had two joysticks, shoulder buttons and a PSP-quality display and we had a plan for online distribution that pre-empted everything that's out there now. We even had mock-ups of the stand we were going to have at E3! Then, in 2000, Ericsson had a major crash and they pulled the plug. We were stunned. I mean, this thing was vibrant and awesome and ready to go. I still have the prototypes!

You went on to join Sony, working on system architecture and tools for the PSP, the PS3 and the Vita, and now you're director of games at Google. That sounds like an exciting gig!

It's like I've landed in engineering and invention heaven. I'm serious! I work in the Fun Propulsion lab and we want to make Google number one in the game space. We have lofty goals and we know we have a lot of work ahead of us but I'm surrounded by really smart people – decent, honest people – with different views and perspectives and Google really promotes cooperation, communication and sharing. It's a love-fest working with them.

Visit www.mical.org for more on RJ's amazing career and to sign up for his Monday Morning Tickler. Thanks to Martyn Carroll for supplying additional images.

» RJ is an accomplished sea programmer. Geddit?

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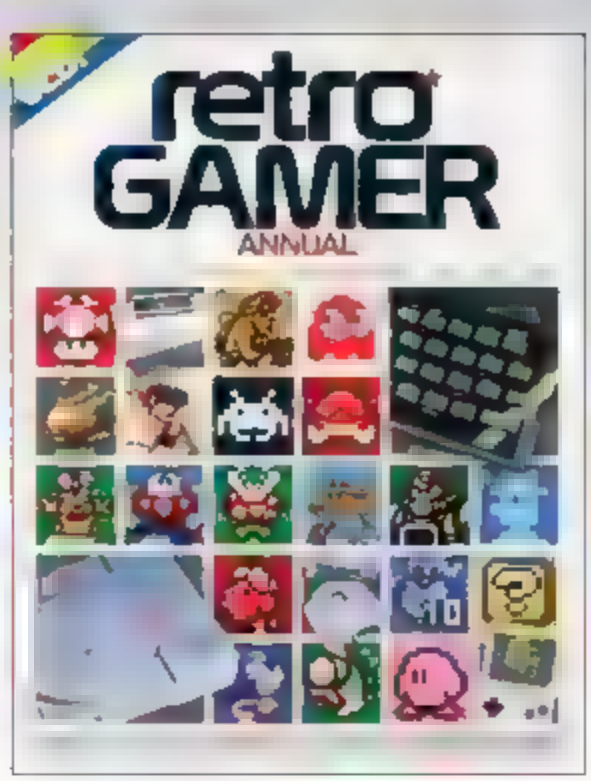

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